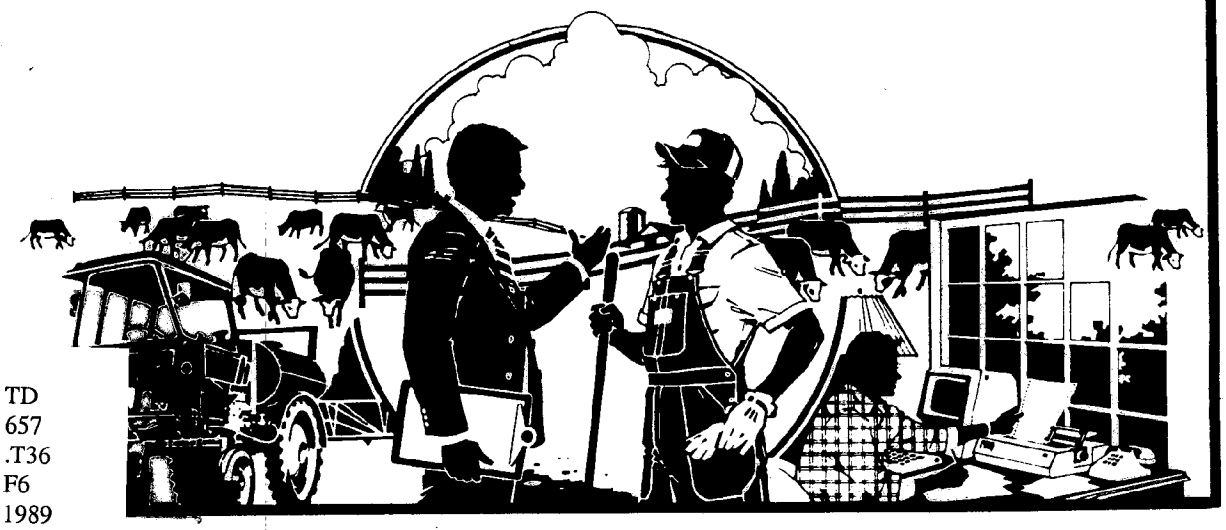
Evaluation and Effectiveness of Stormwater Management Programs in the Little Manatee River Basin

tampa bay regional planning council



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EVALUATION AND EFFECTIVENESS OF STORMWATER MANAGEMENT PROGRAMS IN THE LITTLE MANATEE RIVER BASIN

Submitted to:

THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
OFFICE OF COASTAL MANAGEMENT

Submitted by:

TAMPA BAY REGIONAL PLANNING COUNCIL
St. Petersburg, Florida

Funds for this project were provided by the Department of Environmental Regulation, Office of Coastal Management using funds made available through the National Oceanic and Atmospheric Administration under the Coastal Zone Management Act of 1972, as amended.

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EXECUTIVE SUMMARY

The Tampa Bay area is one of the fastest growing regions in the state. The impacts of this growth on the Tampa Bay estuarine system have been the subject of numerous scientific investigations and have triggered a variety of efforts aimed at controlling point sources of pollution, habitat destruction and other deleterious activities. However, it has become abundantly clear that if such efforts are to be successful, they must be better coordinated and must be conducted within a broader, basin-wide management perspective.

With this in mind, the Florida Department of Environmental Regulation, with funds from the federal Coastal Zone Management program (Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration), sought to develop a basin-wide analysis of the Little Manatee River. The program is expected to require a 2- to 3- year cooperative effort between federal, state, regional and local agencies to develop and implement comprehensive, basin-wide management policies for the Little Manatee River watershed. This grant is the first stage of the effort to examine stormwater regulations and management programs affecting the Little Manatee River basin.

The priority area of Tampa Bay selected for this project is the Little Manatee River watershed, located on the eastern side of the bay in Hillsborough and Manatee Counties. Little Cockroach Bay and the nearshore waters of Tampa Bay are also included in the study area. This area is the last remaining major river of the Tampa Bay system in a relatively natural condition. Mangrove islands, tidal marshes, marine grassbeds and oyster bars characterize the downstream estuarine portions. The headwaters of the system contain floodplain hardwoods, cypress swamps, and freshwater marshes.

Pressures to develop the area make it imperative that the drainage basin be managed as an ecological and hydrologic unit with particular emphasis on managing stormwater runoff from new development and maintaining natural flow regimes. It is important that a management framework be in place prior to actual development.

The Tampa Bay Regional Planning Council has received support from the DER Coastal Zone Management program to undertake this analysis of the stormwater regulations and management programs affecting the Little Manatee River basin. Evaluation of stormwater management programs focuses upon:

- identifying existing regulations applicable to the study area
- identifying strengths and weaknesses of existing policies, programs, and regulations for achieving basin management objectives

- identifying opportunities for improving mutual support between state, regional and local programs affecting the basin, and

- providing preliminary recommendations for improving implementation of stormwater management regulations.

In order to gain a working understanding of stormwater management requirements, the workscope for this undertaking includes a one on one interview with local stormwater regulators, with the intent to identify recommendations for improvements and implementation. Each participant was requested to identify existing implementation strategies, to indicate any special requirements necessary for the study area, to describe stormwater controls which are not effective or problematic, and to offer any recommendations to improve stormwater regulation. All individuals that were requested to participate provided significant first-hand information and recommendations which supports program objectives. The appendix contain many of the current rules and regulations governing stormwater management by state, regional and local governments.

Significant recommendations on all aspects of stormwater management warranted a special section devoted to stormwater improvements needed for all levels of government. The summary of recommendations section is broken down into the following areas of action:

- stormwater management master plan
- enforcement of stormwater controls
- agricultural runoff controls
- reconstruction of existing development
- land acquisition
- stormwater system analysis, and
- land use practices.

This section represents a compilation of recommendations assembled through the interview process and analysis of state and local government rules and requirements currently in place. The results of the program are oriented toward establishment of a coordinated stormwater management framework for the Little Manatee River basin, which can also be applied as a model for other watersheds within the State of Florida.

I. INTRODUCTION

The Tampa Bay area is one of the fastest growing regions in the state. The impacts of this growth on the Tampa Bay estuarine system have been the subject of numerous scientific investigations and have triggered a variety of efforts aimed at controlling point sources of pollution, habitat destruction and other deleterious activities. However, it has become abundantly clear that if such efforts are to be successful, they must be better coordinated and must be conducted within a broader, basin-wide management perspective. They must also focus more clearly on controlling non-point source pollution, maintaining natural freshwater inflows to the estuary, and on integrating consideration of living resource management efforts in local and regional capital improvement programs, comprehensive plans, and other governing documents.

Major obstacles confronting basin-wide management in the area include the size and complexity of drainage areas around the Bay, a lack of detailed information upon which to base needed policies and ordinances, and the rapid urbanization of critical watersheds. For maximum efficiency in using available funds and expertise, efforts must be directed at priority geographic areas and regulatory improvement needs.

With this in mind, the Florida Department of Environmental Regulation, with funds from the federal Coastal Zone Management program (Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration), sought to develop a basin-wide analysis of the Little Manatee River. The program is expected to require a 2- to 3- year cooperative effort between federal, state, regional and local agencies to develop and implement comprehensive, basin-wide management policies for the Little Manatee River watershed. This grant is the first stage of the effort to examine stormwater regulations and management programs affecting the Little Manatee River basin.

Project results are intended to lead to better "special area" management in local and state programs and to provide the basis for integrating local land use, environmental protection and stormwater management programs with the state-administered Cockroach Bay Aquatic Preserve and the Little Manatee River Outstanding Florida Waters programs. The project will also serve as a prototype or model for similar efforts in other watersheds in the Tampa Bay system toward the longer term goal of enhancing the overall health of Tampa Bay.

The priority area of Tampa Bay selected for this project is the Little Manatee River watershed, located on the eastern side of the bay in Hillsborough and Manatee Counties (Figure 1). Little Cockroach Bay and the nearshore waters of Tampa Bay are also included in the study area. This area is the last remaining major river of the Tampa Bay system in a relatively natural condition. Mangrove islands, tidal marshes, marine grassbeds and oyster bars characterize the downstream estuarine portions. The headwaters of the system contain floodplain hardwoods, cypress swamps, and freshwater marshes.

Portions of the Little Manatee River west of U.S. 301 are classified as an Outstanding Florida Water and lie within the Cockroach Bay Aquatic Preserve. Although there has been considerable state, regional and local interest in the area, local government has not yet developed a comprehensive management plan for the watershed, primarily due to a lack of funding and intergovernmental support.

Land uses in the drainage basin are predominantly rural and agricultural, and while present uses possibly contribute pollutants to the system, the primary concern is that the area lies directly in the path of future urban development. The recently-completed Interstate-75 highway provides a major transportation corridor for growth, and a large portion of the Little Manatee River watershed has recently received approval for zoning to higher densities and urban/suburban uses.

Pressures to develop the area make it imperative that the drainage basin be managed as an ecological and hydrologic unit with particular emphasis on managing stormwater runoff from new development and maintaining natural flow regimes. It is important that a management framework be in place prior to actual development.

The Tampa Bay Regional Planning Council has received support from the DER Coastal Zone Management program to undertake this analysis of the stormwater regulations and management programs affecting the Little Manatee River basin. Evaluation of stormwater management programs focuses upon: identifying existing regulations applicable to the study area; identifying strengths and weaknesses of existing policies, programs, and regulations for achieving basin management objectives; identifying opportunities for improving mutual support between state, regional and local programs affecting the basin; and providing preliminary recommendations for improving implementation of stormwater management regulations.

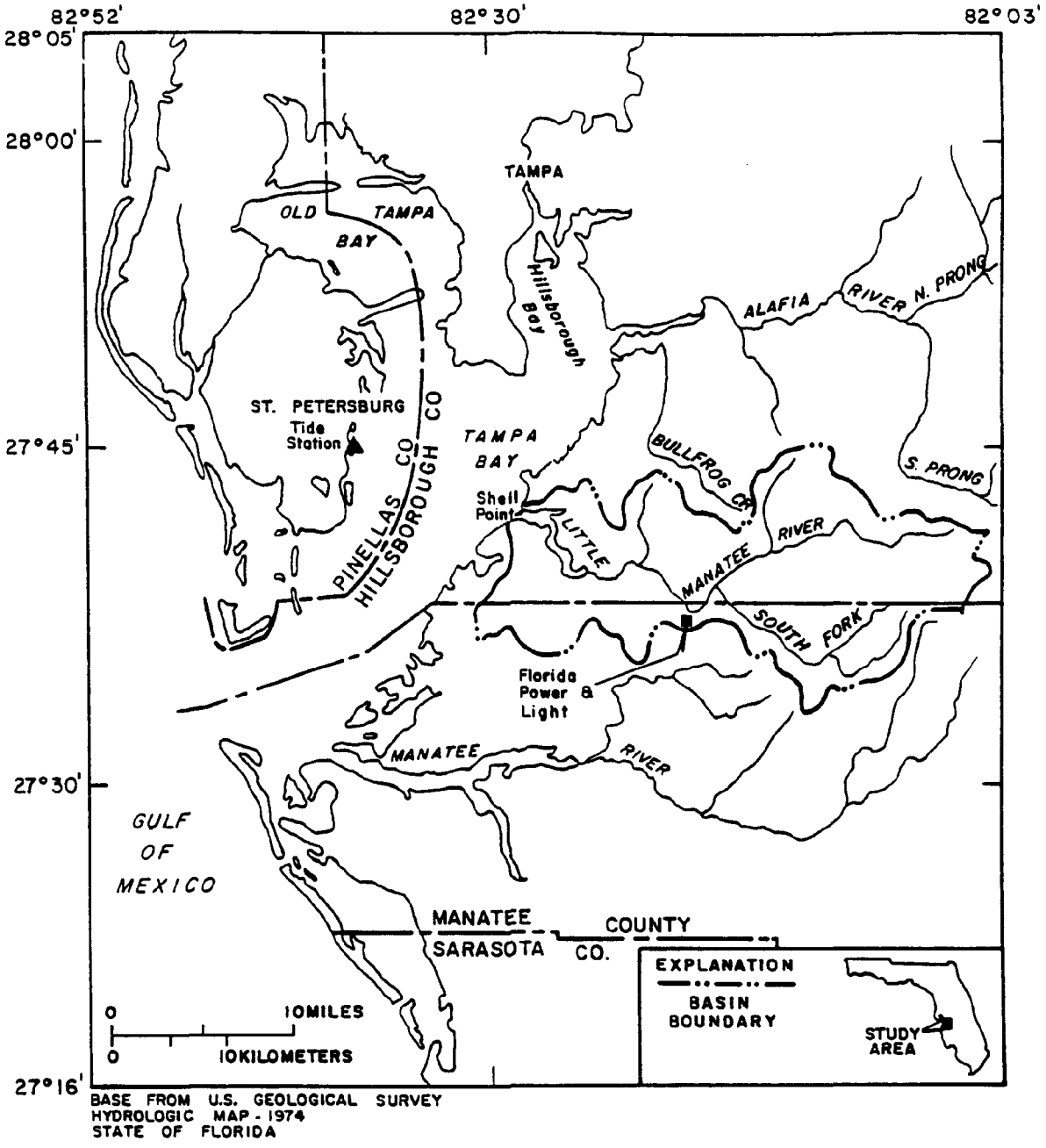

Figure 1. Little Manatee River Watershed (USGS, 1984).

In order to gain a working understanding of stormwater management requirements, the workscope for this undertaking includes a one on one interview with local stormwater regulators, with the intent to identify recommendations for improvements and implementation. Staff of the TBRPC has met with the following individuals and representative organizations:

- William (Bill) Kutash, Florida Department of Environmental Regulation
- Victor A. Gagliardo, Southwest Florida Water Management District
- William J. Veon, Jr., Hillsborough County - Planning and Zoning Department
- Stuart Santos, Environmental Protection Commission of Hillsborough County
- Thomas Larkin, Manatee County Public Health Department
- Robert Whinery, Manatee County Highway Department
- Ronald Giovannelli, Florida Land Design and Engineering
- Jacob Stowers, Pinellas County

Each interviewee was requested to identify existing implementation strategies, to indicate any special requirements necessary for the study area, to describe stormwater controls which are not effective or problematic, and to offer any recommendations to improve stormwater regulation. All individuals that were requested to participate provided significant first-hand information and recommendations which supports program objectives.

The results of the interview program are tabulated into agency categories for ease in evaluation. Agency recommendations in each category are selected from the personal interview process and are not the sole suggestion of the individual representing the agency. It should also be noted that very few special requirements exist for the Little Manatee River watershed, except for the areas affected by the Outstanding Florida Waters designation, which is discussed in detail below. The results of the program are oriented as to also be applicable to other basins within the jurisdiction, or to be used as a model for other agencies to implement.

II. FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

Implementation of Chapter 17-25, F.A.C.

The Florida Water Resources Act of 1972 established the Florida Department of Environmental Regulation (FDER) as a resource protection and umbrella administering agency for water quality. Rapid urbanization with the associated land clearing and paving of previous surfaces has accelerated stormwater runoff problems in the last several decades. Recognition of runoff quality and quantity problems led Florida to begin drafting regulation to control stormwater in the late 1970's.

In addition, Section 208 of the Clean Water Act (1975) required states to control nonpoint sources of pollution generated by such land uses as agriculture, silvaculture (forestry), mining, urban development and others. The FDER and twelve designated local agencies received financial support from Section 208 grants to evaluate Florida's stormwater problems and to develop technical and administrative methods of treatment and control. The initial focus of attention centered on urban stormwater needs, due to the local agencies receiving 208 grant support. The FDER took responsibility for investigating agriculture and forestry activities statewide, and the development of management strategies for controlling nonpoint sources of pollution (Livingston and Cox, 1985).

The first official state regulation specifically addressing stormwater was adopted in 1979 as part of Chapter 17-4, Florida Administrative Code (F.A.C.). Initial rule implementation is best described by Livingston and Cox (1985) as follows:

> "Chapter 17-4.248 (F.A.C.) was the first attempt to regulate this source of pollution that, at the time, was not very well

understood. Under Chapter 17-4.248 (F.A.C.) the Department based its decision to order a permit on a determination of the 'insignificance' or 'significance' of the stormwater discharge. This determination seems reasonable in concept; however, in practice such a decision can be a variable as the personalities involve. What may appear insignificant to the owner of a shopping center may actually be a significant pollutant load into an already overloaded stream."

Concurrently, the Department began reviewing the results of research being conducted under the 208 program. The grant programs identified that stormwater discharges were responsible for over half of the pollution load entering Florida waters, while in many watersheds stormwater runoff accounted for all of the pollutant load. In addition, Livingston (1985) identified at the time that stormwater associated pollution is responsible for:

1) 80 to 90 percent (%) of the heavy metals loading to Florida surface waters.

2) Virtually all of the sediment deposited in state waters.

3) 450 times the suspended solids going to receiving waters and nine times the load of biochemical oxygen demand (5 day) substances when compared to loads from secondarily treated sewage effluent.

4) Nutrient loads comparable to those in secondary treated sewage effluent discharges.

In 1980 the FDER recognized water quality problems associated with stormwater runoff, especially urban sources, and began assimilating regulations for their control. After two years, more than 100 meetings and 29 official rule drafts for review and comment, the Stormwater Rule, Chapter 17-25, F.A.C. became effective on February 1, 1988.

Since some water quantity regulation occurred prior to 1982, the overriding standards of Chapter 17-25 (F.A.C.) are the water quality standards and appropriate regulations established in other department rules (Livingston and Cox, 1985). In order to acquire a stormwater discharge permit, the applicant must provide reasonable assurance that stormwater discharge will not violate state water quality standards (Chapter 17-4). Due to the quantity of potential applicants and receiving water bodies, FDER decided to establish a rule based upon performance standards of stormwater treatment facilities.

The performance standard is a technology-based effluent limitation requirement that design of stormwater treatment facilities must achieve or better the required treatment level in order to be in compliance. The actual performance standard by rule is the retention or detention

with filtration of the runoff from the first one inch of rainfall or the first one half inch of runoff for stormwater treatment facilities that serve a drainage area of 100 acres or less.

The performance standard criteria was developed by considering several inherent properties of stormwater in Florida which include the annual storm frequency distribution and the first flush of pollutants. Rainfall records and distribution curves identify nearly 90% of a years storm events in Florida produce less than one inch of rainfall (Anderson, 1980 in Livingston and Cox, 1985).

The "first flush" of pollutants refers to the largest concentration of stormwater runoff pollution normally occurring during the early portion of a storm event with concentrations tapering off as the runoff continues (Figure 2). Florida studies (Wanielista, 1979) identified that for a variety of land uses the first one half inch of runoff when projected to annual loadings, contained 80-95% of the total annual loading of most stormwater pollutants (Livingston, 1985). In addition, the studies indicated that as the drainage area increases above 100 acres the annual pollutant load contained in the first one half inch of runoff drops below 80% because of the diminishing effects of the first flush of pollutants from larger watersheds (Wanielista, 1979). This information supports the performance standard for projects larger than 100 acres which is the treatment of runoff from the first one inch of rainfall.

Treatment of stormwater normally occurs either by retention or detention with filtration. Retention treatment of stormwater requires the diversion of runoff to a separate treatment area without any discharge to surface water bodies. Examples of retention treatment includes discharges through percolation, exfiltration, and evaporation processes and generally having residence times less than three days.

Detention facilities are designed in-line systems where all of the runoff from a drainage area passes through a treatment pond and is subsequently discharged to surface waters. The Chapter 17-25 F.A.C. Rule of 1982 required that discharges from detention ponds pass through a suitable filter material to remove suspended materials and that fraction of the dissolved constituents in stormwater associated with particulate materials.

The Stormwater rule has been reviewed regularly to ensure that progressive stormwater management techniques are implemented. Significantly, the FDER initiated rule making in November, 1984 to revise Chapter 17-25 F.A.C. in order to achieve the following objectives, according to Livingston (1985):

1) To implement performance standards for stormwater management systems that incorporate isolated wetlands as mandated by the Warren S. Henderson Wetlands Protection Act.

2) To bring about greater consistency among treatment requirements for point and nonpoint source discharges.

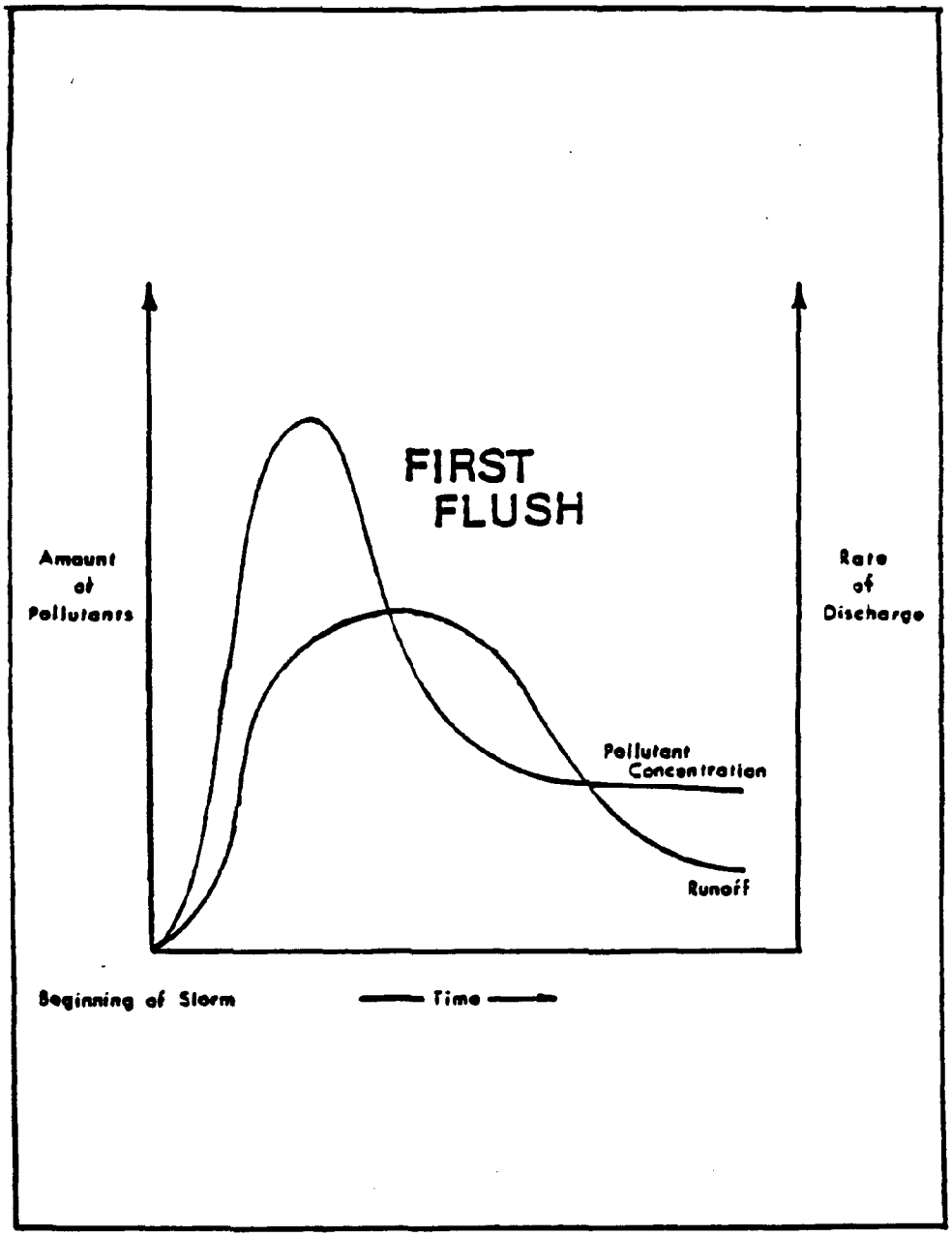

Figure 2. The "First Flush" Effect of Pollutants in Stormwater Runoff (Livingston, 1985).

3) To promote more innovative and comprehensive stormwater management.

The revised rule was adopted by the Environmental Regulation Commission on March 28 and became effective on May 8, 1984. The major changes reported by Livingston (1985) to the rule are:

1) Provision for stricter treatment requirements for stormwater discharges to waters already below water quality standards.

2) A required safety factor of at least two for filtration systems unless the applicant submits test results, measured permeability rates, soil test or other field data to demonstrate that a lower safety factor is appropriate.

3) A public safety requirement that wet detention and retention basins either be fenced or contain side slopes that are no steeper than 4:1. In addition, all slide slopes shall be stabilized to minimize erosion and subsequent sedimentation of the basins.

4) Mandated erosion and sediment control best management practices (BMP's) during construction to ensure that sediment remains on-site.

5) Oil and grease removal BMP's for sites which are a potential source of oil and grease in excess of water quality standards. This applies to most commercial or industrial land uses, multi-family residential projects or highways.

6) An additional level of treatment for direct discharges to Outstanding Florida Waters (OFW).

7) The conversion of noticed exemptions to a general permit except in the geographical area served by the Southwest Florida Water Management District.

8) A new general permit for stormwater management systems, that include a combination of practices such as swales, pavement, landscape or natural retention that provide for the percolation of a three-year, one-hour design storm within 72 hours.

9) Permitting of regional stormwater discharge facilities that are designed and constructed to accept and adequately treat stormwater from multiple parcels. A new exemption is also provided for those who will discharge into a regional facility. The major objective is to promote the concept of a local government stormwater utility and provide more comprehensive stormwater management throughout a watershed.

10) The implementation of performance standards for the permitting of wetland stormwater discharge facilities. The wetlands that may be used for stormwater management are those

which are connected to other state waters by either an artificial watercourse or an intermittent watercourse. The performance standards require the same volume of treatment as other stormwater discharge facilities and generally follow the same pretreatment guidelines previously discussed. However, the performance standards also set low and high water levels within the wetland to ensure that it is neither desiccated nor over-impounded, thereby maintaining the wetland's hydroperiod which is a critical element in protecting the ecological characteristics of the wetland. To maximize the natural treatment functions of the wetland, the stormwater must enter the wetland via sheetflow and be drawn down over five days with no more than half of the treatment volume discharged from the wetland within the first 60 hours. Wetlands stormwater discharge facilities will be monitored to determine the impact of stormwater on the ecology of the wetland and evaluate the effectiveness of the wetland in reducing stormwater pollutant loads.

Effective in October 1984, the Florida Department of Environmental Regulation contracted by rule stormwater regulation to the Southwest Florida Water Management District (SWFWMD).

The delegation of authority to SWFWMD included the majority of regulatory responsibilities except for the following areas whose responsibility is retained by FDER:

- The discharge of stormwater to groundwater resources.
- The use of wetlands for stormwater storage and treatment.
- Water use systems that combine stormwater with other sources of pollution (i.e.: industrial runoff, wastewater mixed effluent systems).
- Redevelopment areas or retrofitting older stormwater treatment systems.
- Permitting applications for the SWFWMD.

The most recent adopted Chapter 17-25 F.A.C. (DER, 1986) has been included in Appendix A.

Program Evaluation

As previously mentioned, the Stormwater Rule receives periodic review and is revised to resolve permitting concerns. Most recently, problems with detention facilities using filtration systems have required FDER to advise permit applicants to select another form of treatment. The FDER is currently undergoing revision to the Stormwater Rule, Chapter 17-25, F.A.C. to reflect the most recent regulatory requirements (see draft in Appendix B).

The general changes proposed in the draft revised rule (October 10, 1988) are as follows:

- Revise chapters 17-25 F.A.C. to more accurately reflect Water Management District stormwater rules, to assist with consistent review between agencies.

- Require the depth in retention ponds to be no deeper than ten feet. This will provide for a more natural pond character without promoting deep oxygen depleted "dead zones" in the bottom of stormwater facilities.

- The rule change mandates 35% of the surface area consist of a planted (or mulched) littoral zone for biological assimilation of pollutants.

- Wet detention stormwater discharge facilities will contain the runoff, and bleed down required stormwater volumes in no less than 5 days with no more than one-half of the volume to be discharge within the first 60 hours.

- A permanent pool of water will be maintained or the residence time of at least 14 days is required for the bleed down to the pond bottom. Extending the residence time allows degradation and consumption of the majority of oxygen demanding substances within the stormwater treatment facility before discharge to state waters.

- Performance standards are recommended to be increased from treating runoff from the first one inch of rainfall or, as an option for drainage areas less than 100 acres the first one half inch of runoff; to treating runoff from the first two inches of rainfall or one inch of runoff, respectively.

- The use of underdrain filter systems have been withdrawn as a feasible treatment option.

- Clarification of project responsibilities for compliance monitoring to verify design and construction of treatment systems.

In addition, the FDER is considering delegating authority of stormwater treatment in wetlands to the approved Water Management Districts (WMD) for regulation. Since the WMD's have increased jurisdiction over isolated wetland systems and other surface water bodies, the application of this Stormwater rule and WMD policies to wetlands will prevent duplicative permitting or review.

The 1989 Florida Legislative session adopted Senate Bill 484 to further establish the state institutional structure for stormwater management.

The results of the 1989 session are provided by Livingston during a workshop on changing FDER rules (ASCE/FDER, 1989) as follows:

I. The legislation accomplishes the following:

A. The regulatory framework of the State's stormwater programs is clarified. The Department of Environmental Regulation is the lead agency and is responsible for statewide standard setting and direction for the overall program. The water management districts are the chief administrators of the law and will set regional stormwater goals and policies in association with their Surface Water Improvement and Management Act plans, and the local governments, through their comprehensive plans, will develop the on-the-ground stormwater management programs that are consistent with the State and water management district goals.

B. The standard setting procedures for water implementation, management districts and local governments are clarified to overcome confusion resulting from differing program requirements.

C. A training program for designers, builders and inspectors of stormwater systems is established.

D. Local governments will develop stormwater master plans as part of their comprehensive planning process to address existing deficiencies and future needs.

E. Local governments will be asked to establish stormwater utilities or stormwater benefit areas to improve management of stormwater programs. These will be independent of ad valorem taxing mechanisms, the traditional means of local government funding, and will be based on the "user-pay" concept.

F. A source of State revenue to pay for stormwater system design and cooperation is established through amendments to the State's waste treatment revolving loan program. The amendments will allow cities and counties to obtain low-interest loans for construction of stormwater management facilities.

G. The need for proper management of agricultural discharges is recognized in the State Comprehensive Plan.

H. Consolidation of stormwater regulatory authority within the regional water management districts. Water quality issues can now be regulated concurrently with and from the same basis of law as water quantity issues.

I. Stormwater planning and design will shift form a single-site focus to a comprehensive watershed plan approach that can meet our needs for proper stormwater management. The single-

site approach may solve a single stormwater problem, but it too often creates other problems at downstream sites. The single-site approach also may result in prohibitively high maintenance costs. Land use planning and watershed management integrated into the stormwater management process will offer improved management of water quantity and quality, will reduce costs, reduce the risk of runoff problems downstream, and increase land development opportunities.

Recommendations

The FDER continues to evaluate implementation of Chapter 17-25 F.A.C. and revise where appropriate to improve and coordinate stormwater regulation. The most recently recommended revisions to the Stormwater Rule resolve numerous problematic design and implementation concerns raised during the interview process of this report. However, additional stormwater regulation and management issues remain unresolved and can potentially affect water quality and quantities within the Little Manatee River drainage basin.

The number one issue raised most often during the interview process was stormwater controls for agricultural activities. Agricultural runoff normally contains loadings of nitrogen and phosphate, herbicides and pesticides, excessive quantities of oxygen demanding substances and coliform bacteria.

Management of agricultural runoff must be initiated for all newly created agricultural lands as a priority. Educational programs are required to assist agribusiness in preventing erosion, sedimentation, excess fertilizer, pesticide and herbicide applications. Eventual stormwater management of existing agricultural areas will be necessary to support water quality maintenance or improvements.

Retrofitting for stormwater management cannot and must not be limited to agricultural areas. Urbanized basins throughout the State of Florida continue to pour excessive nutrient, metal, petroleum and bacterial constituents into state surface water bodies. Reconstruction for stormwater treatment in any urbanized atmosphere is very expansive, and using existing technologies requires large tracts of land for treatment.

Future legislation will consider and potentially adopt requirements for retrofitting. Since the reconstruction of runoff control is expected to require a long-term commitment of financial support for improvements, a well defined plan of implementation is necessary. The first objective will be to inventory existing conditions of a watershed, which can include:

- watershed limits
- land use
- water conveyance features, and
- loadings at particular points into the systems

Identification of loading rates within the system will help to establish priorities for improvement. Identifying priorities will not only require consideration of pollutant loadings, but also financial requirements to achieve load reductions. A balance must be achieved between capital outlay and net improvements. Additionally reducing nutrient loads into areas with little circulation may achieve a greater benefit than removing the same load from areas with good flushing. Guidelines for improving stormwater quality should be developed between multiple agencies for distribution over a statewide basis.

Since the FDER is the lead state agency for regulation of water quality, it will also be their responsibility to ensure coordination and standardization of development review. FDER is supportive of authority delegation to SWFWMD with eventual further delegation to the county agencies. Evaluation of the "domino" delegation of authority for stormwater regulation and its affects on the Little Manatee River watershed is discussed in greater detail during review of the county stormwater management practices. In addition, many unanswered questions remain for design and techniques used in stormwater management. Responses during the interview process indicated a range of opinions as to whether treatment systems are functioning properly. A lack of in-situ information (information gathered from the source) available to regulators and planners was also identified. FDER should continue to review stormwater treatment techniques and other applications for future rule revisions and refinements.

Concern is also expressed with construction of stormwater treatment facilities. The actual engineering and design of treatment facilities must be approved by a certified engineer and reviewed by the appropriate agencies before issuance of a permit. However, compliance monitoring has been identified as the weakest link of the permitting process at this time. Construction verification and "as-built" certification is necessary to ensure proper installation and adequate treatment of the stormwater facility.

Efforts by the state and county agencies to create "stormwater utilities" must include language dealing with the liability issue. Specifically, if the state and counties create and maintain stormwater facilities then ultimately will they be responsible for water quality standards in the receiving water body during any and all storm events? The liability issue needs to be resolved before attempts to apply stormwater regulation to predeveloped areas, since a net benefit over time will occur.

Finally, the State of Florida should continue to provide technical support and seed funds for innovative techniques and pilot retrofit projects for local governments. Regional stormwater facilities require coordination and financial assistance from multiple agencies for implementation. Additionally, multi-use systems (i.e.: recreational soccer field used for detention during rain events, grassed walkways for swales, etc.) can be applied statewide after initial construction and testing.

III. SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Implementation of Chapter 40D-4

The Southwest Florida Water Management District (SWFWMD) was delegated stormwater authority from the Florida Department of Environmental Regulation by rule (Chapter 17-25, F.A.C.). Delegation of stormwater authority occurred February 1, 1982 to the WMD when SWFWMD adopted Chapter 40D-4 Management and Storage of Surface Waters (SWFWMD, 1988). Appendix C includes the March 1988 version of Chapter 40D-4.

Implementation of stormwater regulation requires SWFWMD Chapter 40D-4 to be consistent or further FDER Chapter 17-25. In addition, additional rules governing stormwater are found in Chapter 40D-40 (General Surface Water management Permits) as they relate to wetlands.

To simplify the permitting process, SWFWMD combined the regulations of surface and stormwater in these rules. Therefore, the rules contained in Chapter 40D-40, and SWFWMD's "Basis of Reviews for Surface Water Management Permit Applications within the Southwest Florida Water Management District" (Basis of Review) also address stormwater regulation pursuant to Chapter 403, Florida Statutes, and Chapter 17-25, F.A.C. (SWFWMD, 1988). The SWFWMD's Basis of Review includes stormwater system design criteria as well as additional clinical and administrative information.

The SWFWMD requires the storage of potential floodwaters through regulation of water quality in stormwater runoff. Primarily the SWFWMD requires the following projects to provide water quantity benefits:

1) Projects located within a closed drainage basin (containing no surface outfall below the 100-year flood level), the required retention volume shall be the post development

runoff volume less the pre-development runoff volume. In addition, the total post development volume leaving the site shall be no more than the total pre-development volume leaving the site for the 100-year storm event.

2) Projects with open drainage basins (free connection with surface outfall) must maintain historic discharge rate.

3) No net encroachment into the 100-year flood plain which would adversely affect either conveyance, storage, water quality or adjacent lands is allowed. SWFWMD allows the compensation of the 100-year flood plain storage volume.

The SWFWMD routinely uses the storage of potential floodwaters to promote aquifer recharge, hydrate previously dewatered wetlands and maintain groundwater levels.

Chapter 40D-4 requires projects be designed so that discharges will meet applicable state water quality standards as set forth in Chapter 17-3 and Section 17-4.242. (F.A.C). SWFWMD currently allows the following design criteria alternatives:

1) Wet detention treatment systems are designed to treat one inch of runoff from the tributary area. Wet detention must allow 35% of the surface area as littoral zone for biological treatment. The treatment volume shall be discharged within 5 days with no more than one-half of the total volume discharged within the first 2.5 days. Since wet treatment requires detention of the stormwater for treatment (biological assimilation, sedimentation) only the volume of water drained below the weir within 36 hours can be counted toward the volume required for water quantity storage.

2) Detention systems with effluent filtration must treat the runoff from the first one inch of rainfall; or as an option for projects less than 100 acres, the first one-half inch of runoff. The effluent must flow through two feet of specified filter material before discharge. The detention volume must be made available within 72 hours and the treatment volume can be applied toward the water quantity requirement.

3) Both on-line retention treatment systems (combines water quantity and quality treatment systems) and off line retention treatment systems (separates water quality treatment from quantity requirements) must treat the runoff from the first one-inch of runoff; or as an option for projects less than 100 acres, the first one-half inch of runoff. Total retention volume shall again be available within three days, however only the treatment volume can be applied toward the storage volume requirements.

In addition, as required in Chapters 17-25 and 40D-4, projects discharging directly into Outstanding Florida Waters (OFW) shall be required to provide treatment for a volume 50% more than required for

the selected treatment system (wet detention, detention with effluent filtration, on-line retention or off-line retention).

In order to meet the design requirements and performance standards, the surface water management system must include the controlled release of water volumes in excess of that created by the design storm event, to insure adequate operation of the system. Gravity control devices or bleed-down mechanisms are designed to discharge the water quantity treatment volume and water quality volume within the predetermined performance standard to control offsite discharge of potential floodwater and promote water quality treatment.

Projects that implement the approved construction techniques are presumed to provide "reasonable assurance of compliance" with the state water quality standards.

Surface Water Improvement and Management (SWIM) Program

The 1987 Florida legislature passed one of the most important pieces of environmental legislation - the Surface Water Improvement and Management (SWIM) Act, which seeks to initiate the restoration and protection of surface water bodies on a state-wide basis. The legislation mandated that the state's five water management districts implement the Act with the Department of Environmental Regulation (DER) as the overview agency.

The legislation also created the SWIM Trust Fund, to which appropriations will be made for support. The first year's appropriation of $15 million was allocated for six priority water bodies - four of which were estuarine waters, including Tampa Bay, during fiscal year 1988. Specifically, the legislation require three primary tasks of the SWFWMD:

- preparation of a management plan for Tampa Bay;
- undertake a data compilation project for the purpose of gathering all past and present information on Tampa Bay, storing it in one central location and providing all interested users with access to the data base; and
- initiate a master water quality assessment of Tampa Bay.

These were the only requirements contained within the legislation. The remaining tasks necessary to implement the legislation are left to the discretion of the SWFWMD. These efforts shall be directed to improvements to water quality and natural systems around Tampa Bay and the proper management of the resources.

In response to the legislative mandate, the SWIM staff of the SWFWMD has completed the preparation of a comprehensive management plan to restore and preserve the Tampa Bay estuary. As identified within the document, entitled "S.W.I.M. Plan for Tampa Bay," the conservation and restoration of Tampa Bay will not be an easy task due to the size of

the estuary (it is the largest open water estuary in Florida), and the longevity, perpetuation and severity of environmental problems. These environmental problems have resulted from the largely unchecked commercial, residential and industrial growth on or near the estuary over the last 150 years.

Implementation of priority programs and projects from the S.W.I.M. Plan should speed the recovery of the Tampa Bay ecosystem. Improvements will be accelerated and increasingly measurable through the eventual implementation of the final (and annually updated) plan. The S.W.I.M. Plan represents a careful effort to balance the needs and uses of the estuary with the needs of other plants and animals that also utilize the resource. Tampa Bay can be restored, but long-term maintenance at a productive, viable equilibrium will depend upon the cooperation of the public as well as local, regional, state and federal governments.

The SWIM program is required to initiate a master water quality analysis of Tampa Bay. To facilitate the analysis the SWIM program has started a Urban Stormwater Analysis and Improvement program. The primary objective of the project is the selection and prioritization of predominately urban sub-basins in which to concentrate efforts as well as the identification, design and implementation of stormwater facilities which will effectively reduce the pollutant loading to the receiving waterbodies (SWFWMD, 1989).

It is anticipated that the Urban Stormwater Analysis and Improvements Program of SWIM will be divided into a minimum of two separate tasks. Task 1 will consist of a minimum of three phases and includes: to prioritize predominantly urban sub-basins within the watershed and the identification of potential projects for non-point source water quality improvements; review each project and develop a conceptual design for identified water quality improvement facilities, and feasibility of implementation of each selected project. The final phase of Task 1 will consist of the detailed design and implementation of selected projects form the previous tasks.

Task 2 will include engineering and analysis services involving surface water, groundwater, environmental and geotechnical testing and analysis. These services may be required for SWIM restoration projects involving alterations to existing surface water flow patterns. The SWIM Urban Stormwater Analysis and Improvements project is the first attempt to evaluate and prioritize Tampa Bay sub-basins for improvements to water quality from stormwater runoff.

Program Evaluation

The Southwest Florida Water Management District is the appropriate level of government for review of stormwater permitting activities. This assessment is supported by the regulatory requirements of the SWFWMD which include water quantity and quality, isolated wetlands, water consumption, the Surface Water Improvement and Management (SWIM)

program and groundwater protection. This affords SWFWMD the ability to take the watershed or "big picture" approach toward stormwater management and regulation.

The SWFWMD additionally participates in tributary management plans with local governments, primarily to resolve problematic flooding concerns. However, the SWFWMD increasingly has supported alternatives that not only alleviate flooding conditions but support water quality and habitat improvements as well. It is the watershed system approach that ultimately is required for any comprehensive management plan.

Similarly, the implementation of Chapter 40D-4 (F.A.C.) by the SWFWMD can support such activities as wetland enhancement, groundwater recharge, maintenance of groundwater levels (prevention of salt water intrusion), tributary flows, promotion of water quality and maintenance of water quantities. The SWFWMD currently considers the potential for wide-ranging impacts created by proposed permitting activities during project review. In addition, the SWFWMD continually revised Chapters 40D-4 and 40-D-40 to reflect changes in Chapter 17-25 to include identified Best Management Practices (BMP's) and Best Available Technologies (BAT's).

Recommendations

The greatest assistance SWFWMD can apply toward protection of the Little Manatee River watershed is the development and implementation of an environmentally sound management plan. No significant flooding problem currently has been identified within the watershed; however, identification of hydraulic performance characteristics and appropriate management recommendation will assist to buffer the watershed from future development perturbations. Protection of existing natural systems will further protection of vegetational communities promoting water quality and habitat objectives.

Management recommendations for the Little Manatee River watershed should support protection of the 100 year floodplain. Protection of the 100 year floodplain provides the storage volume, habitat and water quality buffers for the jurisdictional areas normally preserved through the permitting process.

In addition, through the Save Our Rivers program administered by SWFWMD, significant parcels of land can be acquired as the ultimate protection from development. Currently the Hillsborough County Endangered Lands Acquisition and Protection Program (ELAPP) and the Conservation and Recreational Lands (CARL) program are reviewing tidally influenced areas within the Little Manatee River for public acquisition. The WMD through its Save Our Rivers program can supplement ongoing efforts.

Currently the Little Manatee River basin is predominantly in agricultural land uses. Existing trends identify urbanization development pressures increasing, due to the construction of Interstate

275 and phosphate mining in the upper reaches of the watershed. Future development will require compliance with appropriate stormwater regulation.

Agricultural activity remains relatively unregulated and continues to provide pollutants and sedimentation into the tributary. The SWFWMD can and should take the initiative to begin requiring agribusiness to comply with the same regulations as applied to all other forms of land alteration activities. The agricultural and silvaculture exemptions must be eliminated.

However, any improvements to water quality - even in moderately developed watersheds such as the Little Manatee River - must consider retrofitting developed areas to comply with current regulations. Agricultural areas and the developed centers of Ruskin and Sun City Center can be identified for prioritization of problematic stormwater pollution sources. Areas within Sun City Center were permitted before 1982, exempting the community from water quality stormwater controls. New projects permitted by SWFWMD are required to submit "as built" certification to verify actual construction with permit requirements. Many projects continue to be certified by Professional Engineers after the actual construction and many permit requirements may not be implemented during construction. Compliance follow-ups and appropriate enforcement actions continue to be limited to a few projects.

IV. TAMPA BAY REGIONAL PLANNING COUNCIL

Developments of Regional Impact

As required under Section 380.06, Florida Statutes, and Chapter 22F-210, Florida Administrative Code, the Tampa Bay Regional Planning Council (TBRPC) reviews significant developments termed Developments of Regional Impact (DRIs). Local governments within the TBRPC include the four counties of Pasco, Pinellas, Hillsborough and Manatee, and the 43 local governments located within these counties.

The Development of Regional Impact (DRI) Application for Development Approval (ADA) is intended to provide information to local governments to assist them in making decisions concerning developments having a greater than local impact. Just as the DRI process is not intended to displace local or state substantive or technical reports required pursuant to local or state permits. Rather, the ADA provides a comprehensive look at a proposed development and serves as the basic data source for the preparation of the regional planning agency's final report and recommendations to the local government on the regional impact of the proposed development. The regional planning agency, in fulfilling its responsibilities under Chapter 380, Florida Statutes, will use this base information provided by a developer to consider whether, and the extent to which:

(a) The development will have a favorable or unfavorable impact on the environment and natural resources of the region;

(b) The development will have a favorable or unfavorable impact on the economy of the region;

(c) The development will efficiently use or unduly burden water, sewer, solid waste disposal, or other necessary public facilities;

(d) The development will efficiently use or unduly burden public transportation facilities;

(e) The development will favorably or adversely affect the ability of people to find adequate housing reasonably accessible to their places of employment; and

(f) The development complies or does not comply with such other criteria for determining regional impact as the regional planning agency shall deem appropriate.

The preparation of the ADA is the first major step in the DRI process which establishes the framework for a cooperative planning and review effort between the developer, the local government, regional agency, and federal and state agencies. The developer must contact the appropriate local government and regional planning agency before beginning the preparation of the application.

When a project is determined to trigger Section 380.06, F.S. review, the applicant is required to address the following information requirements and questions related to stormwater management and water quality:

11. Maps

A. A general location map.

B. A recent vertical aerial photo of the site with project boundaries delineated.

C. A topographic map with project boundaries identified (contour intervals from one to five feet should be determined in consultation with the appropriate regional planning agency and local government, based on topographic characteristics of the site). Delineate 100-year flood prone areas (including hurricane flood zones) and indicate major land surface features.

D. A land use map (refer to 12-B) showing existing uses on and abutting the site.

E. A soils map of the site. (Map E) If available, U.S.D.A. Soil Conservation Service (SCS) published soils surveys are preferable.

F. A vegetation associations map indicating the total acreage of each association, based on the Level III vegetation types described in The Florida Land Use and Cover Classification System: A Technical Report.

G. A master drainage plan for the site. Delineate existing and proposed drainage areas, water retention areas, drainage structures, drainage easements, canals and other major drainage structures.

H. A master development plan for the site. Indicate proposed land uses, development phasing, major public facilities, utilities, easements, rights-of-way, roads, thoroughfares and other significant elements.

I. A map of the service areas of all existing and proposed public facilities (e.g., sewage, water supply, fire protection, pubic transit, hospitals, emergency medical facilities, etc.) which serve the site.

15. Environment and Natural Resources: Water

A. Describe the existing hydrologic conditions (ground and surface water) on and abutting the site, including identification and discussion of any potential aquifer recharge areas.

B. Describe in terms of appropriate water quality parameters the existing ground and surface water quality conditions on and abutting the site which will be influenced by this development.

16. Environment and Natural Resources: Wetlands

A. How many acres of wetlands are found on the site? For these purposes, wetlands are described as areas which are subjected to permanent or prolonged periods of inundation or saturation (water is at the soil surface at least two to seven months, seven out of ten years), and/or which exhibit vegetative communities and/or soil types characteristic of this hydroperiod. The Florida Land Use and Cover Classification System: A Technical Report, includes a detailed wetlands definition and is available from each regional planning council.

B. What alterations or disturbances to the wetlands are proposed?

C. What wetland areas will be preserved in their natural or existing state? Describe the planning approach that will be utilized to accomplish this preservation.

17. Environment and Natural Resources: Flood Plains

A. Is any development proposed within the 100-year flood prone area as identified by the Federal Insurance Administration? If so, indicate whether all floor elevations will be above the 100-year flood prone level, and discuss methods which will be used to compensate for the potential flood hazard.

B. Does the local jurisdiction in which this development is proposed qualify for federal flood insurance? If so, attach a letter of verification from the local government.

18. Environment and Natural Resources: Vegetation and Wildlife

A. Identify the dominant species and other unusual or unique features of the vegetation associations delineated on Map F, and specify their ecological function, health and conditions.

B. Are any rare or endangered plants found on the site? If so, what measure will be taken to protect these species?

C. What wildlife (including aquatic life) nest, feed, reside on or migrate to the site? What measures will be taken to protect this wildlife and their habitats?

D. Are any of the wildlife listed under (C) above considered endangered or threatened species? If so, provide a detailed statement on what steps will be taken to protect them and their breeding, nesting, and feeding areas.

22. Public Facilities: Drainage

A. Describe the various elements of the proposed drainage system shown on Map G and discuss the design capacity criteria to be used for the various elements. Include information as to what design storm (e.g. 10 year-24 hour, 25 year-24 hour, etc.) will be used for what portions of the system.

B. From Map G, indicate the total number of acres in each drainage area and specify the acreage of any portions of drainage areas outside the site boundaries. Indicate the total acres and storage capacity of proposed retention areas, and the total acres of proposed impervious surfaces.

C. Specify and compare the volume and quality of runoff from the site in its existing condition to the anticipated runoff at the end of each phase of development. Indicate what provisions will be incorporated in the design of the drainage system to minimize any increase in runoff from the site and to minimize any degradation of water quality in the ultimate receiving body over that occurring in its pre-development state. Indicate the major points of discharge for storm water.

D. Who will operate and maintain the drainage system after completion of the development?

Upon receipt of the applicant's application for Development Approval (ADA), the information is compared against Council policies included in Future of the Region - A Comprehensive Regional Policy Plan (TBRPC, 1987). Informational insufficiencies are identified and the applicant

may go through several Sufficiency Responses before the Council undertakes a final review and provides a report with recommendations to the appropriate local government. Upon resolution of all concerns the applicant is issued a Development Order (DO) by the local government with specific construction and monitoring requirements for the project.

Comprehensive Planning

In June 1985, the Florida legislature took an historic step by passing the Growth Management Act. The legislation included a new State Comprehensive Plan, guidelines for the preparation and adoption of state agency, regional and local government comprehensive plans and coastal protection and development or regional impact reforms. This action initiated a new era of integrated planning for the State of Florida.

The Local Government Comprehensive Planning and Land Development Regulation Act (Chapter 163, Part II, F.S.) mandates that every local government in the State of Florida prepare a comprehensive plan, or amend its existing comprehensive plan, to conform with the requirements of the statute and Chapter 9J-5, F.A.C.

While the Florida Department of Community Affairs (DCA) has the authority and responsibility to review and determine whether local comprehensive plans are in compliance with Chapter 163, F.S., the regional planning councils of Florida have the authority and responsibility to review local comprehensive plans in the context of the relationship and effect of the local plan on the adopted regional policy plan, prepared pursuant to Chapter 186, F.S. and Chapter 27E-4, F.A.C.

Local governments are required to prepare comprehensive plans that are consistent with the State Comprehensive Plan and the appropriate regional policy plan. A local plan will be considered consistent with the State Plan and the appropriate regional plan if it is "compatible with" and "furthers" such plans. The term "compatible with" means that the local plan is not in conflict with such plans; the term "furthers" means to take action in the direction of realizing goals or policies of the state or regional plan. For the purposes of determining consistency of the local plan with the state comprehensive plan or the regional policy plan, the state or regional plan will be construed as a whole and no specific goal and policy will be construed or applied in isolation from the other goals and policies in the plans.

Upon receipt of a proposed local comprehensive plan or plan amendment, DCA will, within five working days, transmit copies of the plan or plan amendment to the appropriate regional planning council and other agencies and governments, which may include but not be limited to, the following:

- The appropriate county land planning agency
- The Department of Environmental Regulation
- The Department of Natural Resources

- The Department of Transportation
- The appropriate water management district(s)
- Florida Department of State
- Florida Game and Fresh Water Fish Commission, and
- The Department of Agriculture and Consumer Services, Division of Forestry (county plans only).

The regional planning councils, and other reviewing bodies, will have 45 days from the receipt of each local plan to provide written comments to DCA. All reviewing agencies may make comments, objections and recommendations on the proposed local plans. The terms "comment, objection and recommendation" are defined pursuant to Chapter 9J-11, F.A.C., as follows:

- "Comment" means a statement of professional opinion regarding the adequacy of an element or portion of a comprehensive plan or plan amendment;

- "Objection" means a statement which identifies a portion of a comprehensive plan or plan amendment that is not consistent with one or more provisions of Sections 163.3177, 163.378, 163.3191, Florida Statutes, the State Comprehensive Plan, the appropriate comprehensive regional policy plan, or Chapter 9J-5, Florida Administrative Code; and

- "Recommendation" means a statement which proposes possible modification(s) to a comprehensive plan or plan amendment that would bring the applicable portion of the plan or plan amendment into compliance.

After receipt of all agency comments, DCA has an additional 45 days to review these comments and transmit to the local government any comments, objections or recommendations for modification they may have. Upon receipt of DCA's comments (which become part of the public record and are admissible in any proceedings involving the plan), the local government has 60 days to adopt, adopt with changes, or determine that it will not adopt, the recommended changes. This decision will be made after, or as part of, the final public hearing on the matter.

Following adoption, the local government will submit the amended plan to DCA. DCA then has 345 days to review the adopted plan to determine if it is in compliance with Chapter 163, F.S. To find the plan not in compliance, DCA must have participated in the pre-adoption public hearing, if requested to do so by the local government. The determination of compliance must be based on DCA's written comments as submitted to the local government prior to adoption or any changes made after the initial review by DCA and included in what was adopted by the local government. During the 45-day final review period, DCA will publish a Notice of Intent to find the plan or plan amendment in compliance or not in compliance in the manner required in Section 163.3187(15)(c), F.S.

If DCA finds the plan not in compliance, the Notice of Intent is forwarded to the Division of Administrative Hearings, Department of Administration, which conducts proceedings according to Section 120.57, F.S. All affected parties may participate in the proceedings. A hearing officer will submit a recommended order to the Administration Commission for final action.

The Tampa Bay Regional Planning Council is one of the 11 regional planning councils in the state of Florida with the authority and responsibility to review local comprehensive plans in the context of the relationship and effect of the local plan on the adopted regional policy plan. Future of the Region, A Comprehensive Regional Policy Plan for the Tampa Bay Region was adopted by the TBRPC in 1987, and will serve as the sole document against which local plan consistency is to be measured.

The procedures (steps) described below will be followed by TBRPC staff when reviewing local comprehensive plans.

Step 1 - It will be requested that each local government transmit a copy (or copies) of their new or amended comprehensive plan to TBRPC on the same day (or earlier) that they provide copies to DCA. A local government will notify the TBRPC as to any elements that are either missing or incomplete, or if the plan will be transmitted later than the scheduled Chapter 9J-12, F.A.C., submittal date.

Step 2 - TBRPC staff will have approximately 35 calendar days 920 to 24 working days) to review each local plan before comments are to be drafted and sent to TBRPC members.

Step 3- TBRPC staff comments will be sent to TBRPC members 10 days prior to the regularly scheduled monthly meeting, as part of the normal mailout from each regular TBRPC meeting. At the same time, a copy of the staff comments will be transmitted to the appropriate local government.

Step 4 - At its regular monthly meeting, the TBRPC will consider the draft staff comments and any oral or written comments submitted subsequently. Action will either be to approve the comments, as drafted, or approve the comments with changes. Action is also needed to approve the transmittal of comments to DCA.

Step 5 - A final review letter will be prepared, along with approved comments, for transmittal to DCA and the appropriate local government. The final review letter must be prepared in a timely manner in order to meet the 45-day statutorily-required time frame.

It should be noted that all reviews will be the result of official Council action.

The regional goals and policies set forth in the Future of the Region will be the primary substantive focus of the local plan review. The final review product will be a statement, with a corresponding report, related to the local plan's consistency with the regional plan. The corresponding report will contain comments, objections and/or recommendations with regard to the local plan's compatibility with, and furtherance of, Future of the Region.

The following TBRPC review guidelines consist of three parts. Part I is entitled "An Interpretation of the Comprehensive Regional Policy Plan Along the Lines of Chapter 9J-5, F.A.C." Part I identifies those regional plan goals and policies that most clearly relate to each of the required local plan elements. Part II of the guidelines addresses three optional elements that may be included in a local plan. Regional goals and policies that most clearly relate to each of these optional elements are, again, identified. It should be noted that any optional elements that a local government may choose to prepare and adopt are subject to TBRPC review. Part III lists the regional issues that are relevant to the successful implementation of the regional plan but are not required to be addressed by local plans. The Council may comment on these issues.

The TBRPC's review guidelines have been prepared to assist local governments in preparing and adopting local plans that are consistent with and further the regional plan. The Council recognized that the successful implementation of the State's integrated planning framework requires the cooperation and involvement of the Council and every local government in the Tampa Bay Region. In keeping with this spirit of cooperation, every effort will be made for close coordination between the TBRPC and all local government entities.

Council Stormwater Policies

The TBRPC goals and policies are representative of review guidelines implemented by the Council for analysis of stormwater quality and quantity as they relate to Comprehensive Planning, DRIs and the Intergovernmental Coordination and Review (IC&R) process. The Tampa Bay Regional Planning Council has established significant goals and policies which support or further existing state and federal rules and regulations. The goals and policies which are related to stormwater management have been included in Appendix D.

The TBRPC reviews wetland management and alteration activities through the Development of Regional Impact (DRI) process and the Intergovernmental Coordination and Review (IC&R) process. IC&R reviews include environmental impact assessments, feasibility studies, and dredge and fill applications. The Council makes recommendations to the permitting agencies. These development review activities require the comparison of wetland impacts with Council policy to determine consistency. Many applications for wetland encroachment include stormwater management as mitigation of jurisdictional losses.

Other Council Activities Affecting Stormwater

At the request of several TBRPC members, the Agency on Bay Management, an arm of the Council, initiated the Natural Resource Committee to evaluate the current TBRPC policies regarding wetland management practices. To assist the Natural Resource Committee in the evaluation, Council staff requested the following agencies to provide a brief overview of wetland management requirements:

- U.S. Fish and Wildlife
- U.S. Army Corps of Engineers
- Florida Department of Environmental Regulation
- Southwest Florida Water Management District
- Environmental Protection Commission of Hillsborough County

Representatives from each agency were requested to address three aspects of wetland permitting:

1. Permittability of a project - or what type of projects can be considered for potential wetland impacts.

2. Compensation or mitigation - Once wetlands have been identified for disturbance, what form of compensation or mitigation is acceptable to offset the impacts.

3. Follow-up monitoring or compliance - After the permit has been issued, how do the agencies verify compliance with permit conditions?

The Natural Resource Committee will provide recommendations to the full Agency upon resolution of the following objectives:

- Evaluate Council policies - are they enough?
- Develop standards supportive of fish and wildlife resources.
- Develop standards that are not inconsistent with permitting agencies.

Initial recommendations of the committee suggest preservation of the 100-year floodplain to combine protective measures for wetlands, transitional areas, wildlife resources and buffer zones into one management composite. Agency recommendations will be tabulated in a report and provided to the Tampa Bay Regional Planning Council for consideration in the spring of 1989 (TBRPC, 1989).

The Tampa Bay Regional Planning Council has historically participated in numerous grant programs, such as this program funded through a Coastal Zone Management grant administered by the Florida Department of Environmental Regulation. Additional programs recently funded through the DER Coastal Zone Management grant programs include:

- The Habitat Restoration Study for the Tampa Bay Region (1987),
- Ecological Assessment, Classification and Management of Tampa Bay Tidal Creeks (1986),

- Assessing Cumulative Impacts on Tidal Creek Watersheds (1987), and
- Documenting the Economic Importance of Tampa Bay (1986).

Additionally the Anclote and Braden River Water Quality Study (1986) was funded through the DER 205(j) water quality program.

The 1987 Florida legislature passed one of the most important pieces of environmental legislation - the Surface Water Improvement and Management (SWIM) Act, which seeks to initiate the restoration and protection of surface water bodies on a state-wide basis. The legislation mandated that the state's five water management districts implement the Act with the Department of Environmental Regulation (DER) as the overview agency.

The TBRPC plays a very active role with the newly formed SWIM program, through its Agency on Bay Management. The SWIM legislation noted that the Water Management Districts should consider the appointment of advisory councils for the surface water bodies identified as priorities. The Southwest Florida Water Management District requested that the Executive Steering Committee of the Tampa Bay Regional Planning Council's Agency on Bay Management act as its Advisory Council for the Tampa Bay Priority water body. The District recognized the collective experience and expertise of the assembled members and the history of the Agency in dealing with bay management issues. This Advisory function will aid the District in the design, planning, and implementation of programs and projects through the SWIM Program.

Additionally, the passage of the SWIM legislation comes at a time when Florida's local governments are preparing local comprehensive plans pursuant to Chapter 163, Part II, F.S. and Chapter 9J-5, F.A.C. Each local government comprehensive plan is required to be consistent with the appropriate regional policy plan and the State Comprehensive Plan. Pursuant to Chapter 9H-11, F.A.C., local plans will be reviewed by the appropriate regional planning council and water management district, as well as several state agencies. The review by the regional planning councils will be primarily in the context of the relationship and effect of the local plan or amendment on the adopted regional plan. The reviews by state agencies and the water management district will relate to their statutory responsibilities. The SWIM Act and the corresponding S.W.I.M. Plan represent the most recent statutory responsibility granted to the Southwest Florida Water Management District.

The SWIM program additionally contracted with the Council to prepare the Application of the Tampa Bay Region's Comprehensive Regional Policy Plan to the SWIM Plan for Tampa Bay (TBRPC, 1988) to assist the District in its review of local plans, specifically through the identification of adopted goals and policies set forth in the Tampa Bay region's comprehensive regional policy plan, the Future of the Region, that are clearly related to the ten specific initiatives identified in the S.W.I.M. Plan. The identification of regional goals and policies will support and in many instances further the District's position on Tampa Bay management issues.

Implementation of funded "special programs" by the TBRPC assist not only the Council in the development of review guidelines but also the local governments which make up the regional organization through the dissemination of innovative ideas and proactive planning. In addition, the implementation of the Growth Management Act will require consistency of local comprehensive plans with the State and Regional policy plans.

Program Evaluation

The Tampa Bay Regional Planning Council does not have specific legislative authority to regulate stormwater management in the region. However, the Council does play a significant role in the region within the following areas:

- Reviews of Developments of Regional Impact
- Comprehensive Planning
- Intergovernmental Coordination and Review (environmental assessments, dredge/fill applications, feasibility studies)
- Grant administration
- TBRPC Agency on Bay Management

Activities accomplished by the TBRPC must be evaluated for consistency with Council policies included within the Future of the Region, A Comprehensive Regional Policy Plan for the Tampa Bay Region (TBRPC, 1987). However, numerous mechanisms exist to evaluate Council policies, with TBRPC approval, and adopt new policies to reflect new technologies or recommendations. The process is currently being accomplished by the Council's Agency on Bay Management with respect to wetland management strategies.

Review of existing TBRPC stormwater policies identify significant, proactive criteria currently being implemented by the TBRPC which further current state requirements. These policies include:

8.8. REGIONAL GOAL:
BY 1995, EXISTING DEVELOPMENTS WILL BE REQUIRED TO MAKE MEASURABLE PROGRESS TOWARD MEETING STORMWATER STANDARDS.

8.8.1 Policy:

Local governments should upgrade or retrofit drainage systems in urbanized areas to include stormwater treatment for water quality.

8.8.2 Policy:

If onsite detention is not feasible, some payment in lieu of detention shall be made to local governments for construction of a regional stormwater facility within that drainage basin.

8.8.3 Policy:

Redevelopment projects, irrespective of previous impervious cover, shall provide or support stormwater improvements within the affected drainage basin.

8.8.4 Policy:

Agricultural runoff shall be handled with Best Management Practices to minimize its impact upon receiving waters.

The Growth Management Act of 1985 requires consistency with Regional policies and eventual implementation on the County local government level. Maintenance of the Tampa Bay Regional Planning Council goals and policies to protect surface water resources is essential for continued overview management of the TBRPC.

Specifically, control of stormwater regulation in the Little Manatee River drainage basin is best accomplished through implementation of the Hillsborough County Comprehensive Plan - Unincorporated area review (see following county discussion) and evaluation of DRIs affecting the study area. Existing Council policies appear to be appropriate for maintenance of surface water resources given the limited regulatory responsibilities and existing state rules and regulations.

Recommendations

Priority should be given to the maintenance and review of Council review policies for management of stormwater runoff. This can be accomplished, and is recommended by periodic review of federal and state rules and regulations governing nonpoint source pollution and inclusion of appropriate policies into the Future of the Region, A Comprehensive Regional Policy Plan for the Tampa Bay Region. Updating of the Council's review document will support the implementation of appropriate policies and regulation by local governments, the Council can further ensure implementation through review of land use change applications by local governments.

The Tampa Bay Regional Planning Council should additionally support development of a stormwater management plan for the Little Manatee River drainage basin by SWFWMD. With the urban changes expected to occur within the watershed, the time is appropriate to establish site specific requirements for the basin.

Previous studies have been oriented toward fixing problematic watersheds, whereas current analysis of the Little Manatee River basin can be used to prevent similar perturbations. It is anticipated that the ongoing program created by the Florida Department of Environmental Regulation (with CZM support) for the Little Manatee River basin will provide a significant data base and management framework for stormwater control.

The Council's Agency on Bay Management will provide vital support for any stormwater management master plan created for the basin. This alliance of experts and involved agencies can provide significant expertise and site specific information. Both the Council and the Agency will promote and coordinate with SWFWMD the dissemination of information to other local governments who would benefit from a master plan for the basin.

The Tampa Bay Regional Planning Council should additionally participate in the identification of problematic areas. DRI review can assist the identification and implementation of mitigative strategies. The use of Geographic Information Systems (GIS) by the Council to query natural and abiotic resources will facilitate identification and information transfers between interested parties. Ultimately site-specific information will provide the necessary format for identification and resolution of problematic areas.

Finally, the Council should take an active role in the review of regulations governing stormwater regulation in the region similar to the current study. Numerous individuals, during the review process, have identified the vast number of regulations and agencies involved with stormwater management. Coordination through the DRI process can benefit applicants by providing requirements up-front. The Council can provide a useful forum for the standardization of rules and regulations to apply. Streamlining the regulatory process, through standardization, will reduce regulatory responsibilities and save time and expense for the applicant.

V. COUNTY REQUIREMENTS

Hillsborough County Stormwater Requirements

Stormwater management is additionally accomplished by local governments, but not to the degree required by state agencies. Hillsborough County currently has a very active stormwater program and anticipates increasing responsibility through delegation of authority.

Currently, Hillsborough County participates in stormwater analysis through the Development Review Department. Authority is gained by Chapter 125, Florida Statutes (1979), and Chapter 163, F.S. (1987) with the ordinance entitled "Site Development Regulation of Hillsborough County." The ordinance is constructed to govern development within unincorporated Hillsborough County and is managed under the County Administrator.

The process is initiated upon submittal of an application for development to the Development Review Department. The plans are distributed to the various departments of the County for review. Upon completion of plan reviews by the different departments, the application goes before the Development Review Panel for approval or correction. Construction plan approval is finally forwarded to the County Commission for adoption. Stormwater requirements are submitted to two separate entities, the Planning and Zoning Department and the Environmental Protection Commission of Hillsborough County.

Water quality considerations are addressed by the Environmental Protection Commission (EPC) of Hillsborough County. The EPC functions under a separate set of guidelines than the County, but participates with the Development Review Department. The EPC's review function for

water quality is currently limited and requires that the applicant receive a SWFWMD surface water management permit prior to approval by EPC. Additional ancillary requirements of EPC is included in Appendix D.

The Planning and Zoning Department requires additional measures of protection for stormwater quantities. The County ordinance contains the following differences from Chapter 40D-4, F.A.C. (SWFWMD requirements):

1. The WMD requires runoff from the post-development 25-year storm event cannot exceed the 25-year predevelopment rate of discharge, based upon an instantaneous peak rate of flow. Hillsborough County furthers 40D-4 by requiring that run-off from a post-development 25-year storm event cannot exceed runoff from the pre-development 10-year storm event rate.

2. The County requires additional storage capabilities through freeboard designs. This is accomplished by requiring one foot of additional storage capacity from the design high water line to the top of berm. The freeboard requirement is to provide an additional level of protection from potential floodwaters.

3. Chapter 40-D-4 allows full credit for water quality treatment volumes toward quantity treatment volumes. The County ensures additional floodwater control by only allowing quantities of water discharged within 24 hours as storage quantities, termed water quality abatement quantity.

4. The County, additionally uses site specific information to identify watersheds which are "peak sensitive" and "volume sensitive."

    a. Volume sensitive areas are waterbodies which are land-locked with no outfall. The County requires the volume difference between pre- and post-development must be retained on-site for a 100-year storm event. Discharge occurs through percolation or evaporation within 72 hours; or, detain 100-year volume and discharge at a rate of one inch in 24 hours.

    b. Peak sensitive areas are waterbodies containing an outfall but are highly susceptible to flooding due to inability of the outfall to discharge runoff volumes. Using site specific watershed analysis, the 25-year storm design capacity is determined at the point of a proposed development within the watershed. Since the development location is a portion of the total watershed to this point, the development is allowed to discharge its percent share up to the 10-year predevelopment runoff quantity of the watershed at the specific discharge location. This ensures management of floodwaters on the development property from cumulatively impacting waterbodies with inadequate outfalls.

The application of requirements which further Chapter 40D-4, F.A.C. by the County promotes the use of site-specific information to prevent water quantity perturbations. Historic flooding problems experienced in the County point to the need for additional regulations and improvements to be applied at existing problematic areas.

The County does not currently have any requirements specifically for the Little Manatee River basin.

Comprehensive Planning Process

As required by the Growth Management Act of 1985, Hillsborough County has currently completed the Comprehensive Plan (draft) for review under Chapter 9J-5, F.A.C. Requirements of the Growth Management Act are described under the Tampa Bay Regional Planning Council discussion of this report.

The conservation and aquifer recharge section of the Hillsborough County (unincorporated area) Comprehensive Plan identifies specific requirements for surface and groundwater protection through stormwater management. Objectives and policies from the Comprehensive Plan (dated February, 1989) include:

Objective 2: By 1995, all the water quality of natural surface water bodies in Hillsborough County which do not meet or exceed State water quality standards for their designated use shall be improved or restored.

Policy 2.8: By 1995, the County shall initiate an interlocal agreement with appropriate regulatory agencies to ensure the development of a nutrient monitoring and control program for those land uses which are located adjacent to surface water bodies and which contribute significant nutrient loadings. Where economically feasible, the program shall require the implementation of Best Management Practices (BMP's) for controlling nutrient loadings, including retrofitting if needed to meet specific alternative criteria as established by the SWIM Program.

Policy 2.9: The County shall cooperate with local and State agencies to improve monitoring and compliance enforcement of point and non-point source discharges.

Policy 2.10: By 1991, the County shall require that existing developments planned for expansion, modification or replacement provide or support stormwater treatment improvements within the affected drainage basin where treatment facilities are lacking. Where

feasible, the County shall require retrofitting of stormwater treatment facilities in urbanized areas lacking such facilities.

Policy 2.11: The County shall monitor emerging stormwater treatment technology and Best Management Practices (BMP's) and shall cooperate with the Southwest Florida Water Management District to ensure that water quality objectives are met through the most appropriate and effective methodologies.

Policy 2.12: The County shall promote a public education program, aimed at residential homeowners, which addresses the surface water quality impacts of improperly managed lawn litter and fertilizer/herbicide/pesticide applications.

Objective 3: There shall continue to be no net loss of natural wetland acreage authorized in Hillsborough County. Upon plan adoption, the County shall seek to achieve a measurable annual increase in restored wetland acreage. By 1995, the County shall achieve a measurable annual increase in restored wetland acreage, through the restoration of degraded natural wetlands, until all economically and biologically feasible wetland restoration is accomplished.

Policy 3.5: By 1990, the County shall actively pursue alternative means of financing surface water quality improvements and wetland restoration projects, including but not limited to: federal and state grant programs, low-interest loans, special local revenue districts and private sector contributions, where appropriate.

Policy 3.6: The County shall, through the land development review process and in cooperation with the Southwest Florida Water Management District, continue to promote the use of desirable native wetland plant species for the creation of wetland habitat and for biologically enhancing filtration and treatment of pollutants in newly constructed stormwater retention and detention ponds.

Policy 3.8: The County shall cooperate with the Southwest Florida Water Management District to ensure that minimum freshwater flows are scientifically determined and maintained to support natural optimal diversity and productivity in estuarine wetlands.

OBJECTIVE 4: The County shall continue to prevent net loss of 100-year floodplain storage volume in Hillsborough County. By 1995, the County shall protect and conserve natural wildlife habitat attributes where they exist within the 100-year floodplains of major rivers and streams.

Policy 4.1: By 1995, the County shall, in consultation with the Southwest Florida Water Management District, amend floodplain management regulations to set forth measures and procedures which not only protect natural floodwater assimilating capacity but also protect fish and wildlife attributes where they exist within the 100-year floodplains of riverine systems.

Policy 4.2: The County, through the land planning and development review processes, and in cooperation with EPC, shall continue to prohibit unmitigated encroachment into the 100-year floodplain of riverine systems.

The County proposes several areas of improvement for stormwater management. Improvements include the development of a nutrient monitoring and control program, retrofitting of urbanized basin and preservation of the 100-year floodplain.

To implement the proactive programs the County is pursuing a Stormwater Utility Fee based upon the existing amount of impervious surface within a development. The proposed user fee has the added benefit of supporting the reduction of impervious surface to reduce imposed charges. The intent of the Stormwater Utility Fee is for maintenance, planning and design of existing problematic systems, and is not expected to affect new development.

The County within its comprehensive plan, will create criteria for stormwater level of service. The following information was provided in the February, 1989 Comprehensive Plan:

1.C.1.b County Stormwater Management Systems:
The adopted level-of-service standards for a subbasin's major stormwater conveyance system, which includes significant canals, channels, ditches, pipeline/culvert enclosures of open systems, and appurtenant structures at crossing/control points, are as follows:

1.C.1.b.(1) The adopted Level of Service standard for any system is the particular system's existing level-of-service until such time that the system is physically upgraded to its adopted intermediate or ultimate Level of Service standard. The physical upgrading of the systems to the higher Level of Service standards will be accomplished by correcting the identified system

deficiencies in accordance with the Stormwater Management Capital Improvements Program.

1.C.1.b.(2) The target-level for the ultimate Level of Service standard, relative to all major stormwater conveyance systems, is the 25-year/24 hours/B level. This level corresponds to that presently required to be provided by new development, except that a greater freeboard is additionally required of new development. However, occasionally physical and/or environmental constraints will not allow an existing system to be modified to the target-level. In such a case the adopted ultimate Level of Service standard is/will be the highest achievable Level of Service, as determined by a Stormwater Management Master Plan (SMMP) study, below target-level.

1.C.1.b.(3) The adopted ultimate Level of Service standard for a major County stormwater conveyance system which discharges into a City of Tampa stormwater conveyance system is the 5-year/24 hour/B level. This standard is based on the City's adoption of a 5-year/critical duration/B Level of Service standard for its systems, and the general location of the City between portions of the County and Tampa Bay. However, in those areas where the City intends to improve the system to a higher Level of Service, the County will adopt a corresponding higher Level of Service standard, up to the ultimate target-level.

1.C.1.b.(4) The target-level for the intermediate Level of Service standard, relative to major stormwater conveyance systems, is the 10-year/24 hour/B level. However, if a system's adopted ultimate Level of Service standard is less than or equal to the 10-year/24 hour/B level, the appropriate intermediate Level of Service standard for the system will be the same as the adopted ultimate Level of Service standard for the system. Also, if all identified system deficiencies must be corrected in order for the system to provide at least the 10-year/24 hour/B Level of Service, the adopted intermediate and ultimate Level of Service standards for the system will be the same.

1.C.1.b.(5) The adopted intermediate and ultimate Level of Service standards, for the major stormwater conveyance systems located within the areas for which completed SMMPs currently exist, have been identified in the SMMP studies themselves and are discussed in the section "Future Conditions and Standards" of the Stormwater Element. These systems will be upgraded to their intermediate Level of Service standards via the FY90 - FY94 portion of the SMCIP, and to their ultimate Level of Service standards via the FY2001 - FY2010 portion of the SMCIP. The areas for which SMMPs currently exist are:

- Archie Creek Subbasin
- Buckhorn Creek Subbasin
- Curiosity Creek Subbasin
- Delaney Creek Subbasin
- Delaney Creek Popoff Canal Subbasin

- Duck Pond Watershed
- Nine Eagles Branch (of Double Branch Creek Watershed)
- North Archie Creek Subbasin
- Raintree Area Subbasin
- Rocky Creek Subbasin
- Sweetwater Creek Subbasin

1.C.1.b(6) The adopted intermediate and ultimate Level of Service standards, for the major stormwater conveyance systems located outside for the areas for which completed SMMPs currently exist, have not been determined.

These standards will be established via the comprehensive Stormwater Management Master Planning program to be conducted as part of the FY90-FY94 portion of the SMCIP. Deficient systems will then be upgraded to their adopted intermediate Level of Service standards via the FY95 - FY2000 portion of the SMCIP, and to their adopted ultimate Level of Service standards via the FY2001-FY2010 portion of the SMCIP. The adopted Level of Service standards for other types of stormwater management facilities are as follows:

- Storm sewer/swale collection system (minor stormwater conveyance system) designed/constructed prior to 1981-standard = existing Level of Service; standard target level = 3-year/critical duration/A level for those systems in need of improvement due to documented poor physical performances, after FY89, which result in flooding at levels C or D during storms less than or equal to the respective target-level event.

- Storm sewer/swale collections system (minor stormwater conveyance system)designed/constructed during or after 1981 - standard - 3-year/critical duration/A level.

- Stormwater detention pond/lake/storage area designed/constructed prior to 1981 and all stormwater retention systems-standard = existing Level of Service for both retention and detention systems; standard target-levels 25-year/24 hour/A (detention systems) and 100-year/24 hour/A (retention systems) for those systems in need of improvement due to documented poor physical performances, after FY89, which result in flooding at levels C or D during storms less than or equal to the respective target-level events.

- Stormwater detention pond/lake/storage area designed/constructed during or after 1981 - standard = 25-year/24 hour/A level.

As for major stormwater conveyance systems, occasionally physical and environmental constraints will prevent the upgrading, when necessary, of a facility to its appropriate target-level. In such

cases, the facility will be upgraded to the highest achievable Level of Service below the corresponding target-level.

The Level of Service provision will ensure maintenance of minimum requirements for stormwater management. The results of level of service criteria will be tied directly to allowable development and available funds for watershed improvements and system maintenance.

Evaluation and Recommendations

Hillsborough County participates in stormwater management regulation, to a degree. The Planning and Zoning Department support stormwater quantity requirements of Chapter 40D-4, F.A.C. and further regulation with site specific requirements. Water quality considerations are accepted by the County when the applicant received a surface water permit from SWFWMD.

However, significant steps can be taken by the County to enhance stormwater/control. Land use regulations often carry the tools necessary to prevent perturbations. The County currently enforces an ordinance to prevent no net loss of the 100-year floodplain. Retention of 100-year flood storage capacity prevents flood conditions. The County should additionally consider preservation of natural systems within the 100-year floodplain to buffer water quality problems through retaining wetland and transitional upland plant species.

The use of density transfers can provide incentives for developers to preserve sensitive areas. Transfers of development rights from floodplain acreage will concentrate development away from wetlands and buffer zones.

Hillsborough County has initiated the Endangered Land Acquisition and Parks Programs (ELAPP) for purchase of sensitive lands through overwhelming approval of a property tax referendum. Lands considered for public purchase include riverine floodplains and coastal marsh systems. Land acquisition programs are highly supported to ensure long term protection and allow restoration of lands with public resources. Keystone wetlands and additional riverine corridors should be prioritized for purchase by the County or with state (Conservation and Recreational Lands (CARL) Program) or regional (Save Our Rivers) support.

Land acquisition can additionally be used for areas in need of stormwater improvements. Borrow pits could be tied into problematic tributaries to promote flood attenuation or pollutant removal through sedimentation. As, reconstruction occurs, public land purchase will become necessary to acquire lands for stormwater treatment. Land acquisition could easily be a major component of future stormwater renovation projects in developed areas.

The County should consider lands previously acquired for recreation as potential stormwater treatment facilities. Parks can provide multi-use facilities during rain events. Softball/soccer fields can serve as dry

detention areas for water quality, or tributaries can be allowed to overflow into special recreational fields to provide storage capacities.

As previously suggested, the County is beginning the process to accept delegation of authority for stormwater permitting. Hillsborough County must first ensure its ability to evaluate water quality maintenance in addition to quantity considerations. The obvious agency to regulate water quality is the Environmental Protection Commission of Hillsborough County. It will be necessary to include quantity and quality responsibility within one County department to ensure consistency and consider the "big picture" of stormwater management, which includes: quality and quantity; wetland management; aquifer recharge; and maintenance of natural communities.

The implementation of a Stormwater Utility Fee will initiate the generation of funds to properly manage stormwater, over a long-time frame. This action will be of significant importance if the County intends to accept stormwater permitting authority. In addition, maintenance of existing systems is required to ensure accurate operation and reconstruction of problematic systems. The utilities fee can eventually support one agency (i.e.: Hillsborough County) responsible for all maintenance within the jurisdiction. Division of responsibility for maintenance is ineffective compared with regional systems and maintenance programs.

The user fee will promote rehabilitation of problematic areas to improve stormwater quality and quantity. The first step toward retrofitting should include requiring all redevelopment projects, irrespective of previous cover, to come into compliance with stormwater regulations at the time. Measurable progress should be achieved by placing stormwater compliance on redevelopment, and public programs to enhance problematic areas.

Hillsborough County should additionally require agricultural activities to conform with stormwater regulations; or at a minimum, best management practices can be applied to all agriculture, silvaculture, aquaculture activities to reduce pollutant loadings around the County.

Palmer and McClelland (1988) identified that "significant improvements in the chlorophyll-a concentration was predicted for Hillsborough Bay when agricultural and urban BMP's were considered" in the Tampa Bay water quality model simulations. The Future of Tampa Bay (TBRPC, 1985) identified stormwater runoff as the major source of water pollution in Tampa Bay. The significant quantities of agricultural loadings to surface water bodies cannot continue to remain unregulated. Hillsborough County can and should address the agricultural problem upon delegation of authority by the SWFWMD. Progress will not be achieved overnight but can be started by the development of an information/education program to identify BMP's and the benefit to the agriculture industry.

In addition, Hillsborough County should co-sponsor the development of a stormwater master plan for the Little Manatee River watershed with SWFWMD. The master plan can be structured to proactively plan for the protection of existing natural systems and communities and restore degraded areas and functions. The Little Manatee basin requires a total watershed analysis before significant development occurs within the watershed.

The Comprehensive Planning process will provide the guiding framework for growth and development in Hillsborough County. Careful evaluation of goals and eventual implementation of the comprehensive policies are essential to ensure protection of natural resources during the orderly expansion of development within Hillsborough County.

State and regional agencies currently contain the authority to regulate stormwater controls. Local governments, however, contain the tools to implement land use decisions which ultimately directly affect stormwater management. Delegation of authority to local governments, which further state requirements, can provide a comprehensive regulation framework for stormwater management.

Manatee County Stormwater Requirements

Manatee County is included within five drainage basins, which encompass Tampa Bay, Sarasota Bay, Manatee River, Myakka River and the Little Manatee River basins. The portion of the Little Manatee River basin within the county's boundaries consists of the South Fork of the Little Manatee River and a small portion of the main channel immediately north of Lake Parrish, totalling about one and one-half miles of the river. Lake Parrish is a cooling pond constructed by Florida Power and Light for the Little Manatee-Willow Power Plant. Water is periodically withdrawn from the Little Manatee River for plant cooling purposes (Florida Land Design and Engineering, Inc., 1989).

Stormwater management in Manatee County is the responsibility of two county agencies; the Pollution Control Division of the Manatee County Public Health Unit (a division of the Florida Department of Health and Rehabilitative Services), and the Manatee County Public Works Department. To a lesser extent, the Manatee County Planning and Development Department is responsible for preliminary site plans and land use requirements.

The Manatee County Pollution Control Division has legislative authority to regulate water and air sources under Chapter 67-1671 Laws of Florida (1967). However, in 1985 the Pollution Control Division delegated stormwater permitting of smaller projects to the Southwest Florida Water Management District (SWFWMD). Currently the Division anticipates expanding into the review of smaller projects which have the potential to affect Class I waters, but will require either additional funding from HRS, other state agencies or the county. The review guidelines for the Manatee County Pollution Control Division for larger developments are included in the Manatee County Comprehensive Plan, included in Appendix F.

The Manatee County Public Works Department predominately takes the lead role in stormwater management for the county. The recently passed Manatee County Comprehensive Plan details the drainage criteria for development, however, additional requirements are included in a "Drainage Manual" attached to the Land Development Codes. The County evaluates development plans with the Comprehensive Plans, which adopt Chapter 17-25 and 40D-4, F.A.C. by reference, and specialized criteria included in the Drainage Manual.

The County dictates new development to include the rate of stormwater discharge to be equal or less than the rate of discharge that existed prior to development, based on a 25-year frequency - 24-hour duration storm event. Storm sewers and drainage channels are designed to accommodate the stormwater runoff resulting from a design storm of 25-

year frequency - 24-hour duration. While the internal drainage facilities on any project is designed to accommodate the runoff resulting from a 10-year frequency.

All detention or retention basins are required to utilize side slopes not greater than 4:1 horizontal to vertical. All projects are designed and constructed to detain and permit the filtration of the runoff from the first one inch of rainfall, unless required to detain additional volume requirements in state and local laws.

Manatee County additionally requires projects within potable water supply watersheds, designated by the WO-M (Watershed Overlay-Manatee Reservoir) and WO-E (Watershed Overlay-Evers Reservoir) overlays on the Manatee County Future Land Use Map, to meet FDER Stormwater System design standards for the discharge into Outstanding Florida Waters (OFW), as identified in Policy 11.3.1.4 (Manatee County, 1988). Special consideration can be granted by the Board of County Commissioners for projects using stormwater management systems which provide for equivalent levels of stormwater treatment. Acceptable equivalent stormwater treatment practices may include, for the WO-M and WO-E overlays, the following:

- retreatment/pretreatment detention systems designed to provide detention times that exceed detention times normally required, and providing repetitive water quality treatment.

- Off-line treatment systems using retention/percolation of at least the first three-quarter inch of stormwater runoff, without release of pollutants out of the retention area.

- Stormwater system designs that significantly increase the time of concentration (i.e.: time taken for stormwater runoff to reach the detention/retention areas), or increase the percentage of post-treatment discharge to greenspace suited for additional water quality treatment.

- Mechanical treatment systems to reduce the amount of directly connected impervious surface.

- Other systems which can be demonstrated to provide additional stormwater treatment equivalent to treatment criteria associated with discharge into Outstanding Florida Waters.

Floodplain regulation which is applicable to stormwater controls include the County minimizing public and private investment within the twenty-five year floodplain by keeping impervious surface and structures within the floodplain to a minimum. Additionally, the county requires that all fill within the 100-year floodplain is compensated for by the creation of storage of an equal or greater volume, and that the compensatory storage is also located within the 100-year floodplain. Areas within the 100-year floodplain adjacent to a tidally-influenced water body are not subject to this level of service performance standard.

The county additionally details innovative policies intended to improve conditions for stormwater quality and quantity improvements. Policy 11.3.2.1 of the local plan recommends where adequate right-of-way and maintenance easements can be acquired, existing deep, steeply-sided drainage ditches should be modified into swale-type drainageways. The county further intends to improve wildlife habitat and supplement natural systems by including the development of artificial wetland systems within the design of public stormwater siltation/detention basins.

Manatee County is particularly concerned with the protection of its Class I surface water resources, as indicated by the supplementary criteria for the overlay districts, and additional proactive planning within the county has identified the need for additional controls for stormwater management. The county has initiated the process to create a Stormwater Management Fee which will establish a monthly charge to all property owners based on the amount of impervious surface. The Comprehensive Plan identifies the use of the funds for the following (Manatee County, 1988):

Policy 11.3.5.1 Utilize funds form the Stormwater Management Fee, or any other adopted countywide stormwater management funding mechanism, to correct existing deficiencies in major public drainage facilities, and to make improvements to those major drainageways necessary to accommodate additional development in Manatee County.

Policy 11.3.5.2 Fund water quality monitoring by use of revenues from the Stormwater Management Fee, or any other adopted stormwater management funding mechanism. Additional water quality monitoring may, however, be required and funded by specific development projects, as deemed appropriate as a condition of development order approval.

Policy 11.3.5.3 Allocate funds for public capital improvement drainage projects only in areas that have had a detailed stormwater study prepared, utilizing appropriate revenues to perform and implement such studies. Drainage studies shall define the flooding and/or water quality problems, and shall provide, and estimate the cost of the necessary improvements.

Implementation Mechanism:

(a) Implementation of the Stormwater Management Fee and appropriate expenditures of revenues form this fee by the Manatee County Public Works Department to achieve compliance with these policies.

The Stormwater Management Fee clearly is intended to evaluate, maintain and improve stormwater conditions within the county by providing a long-term source of revenue. Further, the county recommends conducting advance acquisition of drainage facility sites to avoid escalating land costs and to reduce the need for restudying problem areas due to necessary changes in the location of proposed drainage facilities (Policy 11.3.3.1). This will enhance the ability of the county to identify problematic areas for improvement and the conduit for site acquisition, if necessary.

Policy 11.3.4.4 supports stormwater reuse by generally requiring the design and use of stormwater retention/detention facilities as sources of water for landscaping irrigation, providing that the use of such facilities for irrigation does not adversely affect normal water levels which could impair the viability of any biological stormwater treatment systems.

The county does require identification of each private stormwater management system, and a private party that will be held legally responsible for the continued maintenance and operation of any private stormwater management system.

The Drainage Manual, attached to the Land Development Codes, includes several requirements which are not detailed in the Manatee County Comprehensive Plan. The county does not allow percolation rates into the calculation for retention area requirements or runoff calculations. Additionally the county requires one-foot of additional storage area, or freeboard, above the design 25-year event high water line. Both requirements are added to provide an additional layer of protection above Chapter 40D-4 requirements.

Evaluation and Recommendations

Manatee County participates in stormwater management regulation through the Pollution Control Division of the Manatee County Public Health Unit, and the Manatee County Public Works Department . The Public Works Department supports stormwater quantity and quality requirements of Chapter 40D-4, F.A.C. and further regulation with site specific requirements.

However, significant steps can be taken by the County to enhance stormwater control. Land use regulations often carry the tools necessary to prevent perturbations. The County currently enforces an ordinance to prevent no net loss of the 100-year floodplain. Retention of 100-year flood storage capacity prevents flood conditions. The County should additionally consider preservation of natural systems within the 100-year floodplain to buffer water quality problems through retaining wetland and transitional upland plant species.

Many of the recommendation suggested for Hillsborough County are appropriate for Manatee County to consider. These recommendations are reiterated briefly as follows:

- Density transfers
- Borrow pits for treatment
- land acquisition
- multi-use facilities
- delegation of authority
- stormwater compliance on redevelopment
- stormwater compliance on agricultural lands
- co-sponsor stormwater master plan

Manatee County has a restricted land acquisition program focused on purchase of Emerson Point and problematic areas affected by stormwater. A larger reoccurring revenue for purchase of environmentally significant lands will greatly benefit the county by providing additional public lands for preservation, recreation and regional treatment of rainfall runoff. The Stormwater Management Fee will provide funds for improvements and monitoring, however, the long term acquisition of significant lands is required to support improvements and preservation of natural features.

The county has not indicated any intent to improve or regulate redevelopment projects to ameliorate stormwater quality conditions. Agricultural lands, including those contiguous with the Little Manatee River in Manatee County, continue to provide contaminants to the river system without pretreatment. A countywide process to begin reconstruction of urbanized basins and regulation of agricultural areas is highly recommended.

The "Detailed Stormwater Study" of Manatee County was accomplished to survey major drainageways and basins to construct stormwater profiles. The Little Manatee Basin was not extensively surveyed, due to the large majority of the lands in agricultural use and only a small portion of the watershed within Manatee County. However the results of the analysis for the county, with concentration on urbanized areas, identified problematic regions, structure which need improving and potential retention sites.

The formation of a "Stormwater Management Master Plan" is supported for the entire Little Manatee basin. The results of the intensive water quality and biological survey being accomplished byu the Florida Department of Natural Resource and the SWFWMD for the Little Manatee River will provide an excellent reference point for the co-sponsorship and development of a Stormwater Management Master Plan for the entire Little Manatee River basin.

VI. STORMWATER MANAGEMENT RECOMMENDATIONS

During the interview process, area representatives were asked about improvements needed in regulation, design and compliance. Significant recommendations on all aspects of stormwater management warranted a special section devoted to stormwater improvements needed for all levels of government. The recommendations section is broken down into the following areas of action:

- stormwater management master plan
- enforcement of stormwater controls
- agricultural runoff controls
- reconstruction of existing development
- land acquisition
- stormwater system analysis, and
- land use practices.

This section represents a compilation of stormwater management recommendations assembled through the results of the interview process and analysis of state and local government rules and requirements currently in place, and includes recommended agency action.

Stormwater Management Master Plan

Until the mid-1980's, very little attention was paid to the water quality and quantity conditions in the Little Manatee River Basin. Since the lands are in predominately agricultural uses, development of the basin has been designed to channel and deliver runoff from fields and rangelands to area rivers and creeks. Presently, the Little Manatee River basin represents one of the last relatively non-urbanized river tributaries to Tampa Bay, and therefore has gained considerable attention for protection.

Development is inevitable for the Little Manatee area, primarily due to the Interstate - 75 corridor bisecting the watershed, vast areas of open lands to support large developments, and scenic opportunities provided by the river. The Department of Environmental Regulation (DER) selected the Little Manatee to evaluate conditions before development, and therefore establish resource-based controls which will allow protection of the resources during growth expansion into the basin. The results of the intensive water quality and biological survey being accomplished by the DER, Florida Department of Natural Resource and the SWFWMD for the Little Manatee River will provide an excellent reference point for the co-sponsorship and development of a Stormwater Management Master Plan for the entire Little Manatee River basin.

The need exists for a comprehensive stormwater plan to identify specific areas for protection and enhancement. Since every tributary to Tampa Bay has altered flow regimes (TBRPC, 1986), tributaries with more representative flow patterns are of paramount importance to maintain and protect, such as the Little Manatee River. Additionally, a comprehensive plan which includes the SWFWMD, Hillsborough and Manatee Counties will be able to tie together the agency and local governments responsible for the area.

The Southwest Florida Water Management District has accomplished several stormwater Management analysis of area streams; including Rocky/Sweetwater Creeks, Delaney Creek and Archie/Buckhorn Creeks. Primarily as a result of flooding, the SWFWMD conducts hydrologic investigations and develops stormwater management master plans. The main objectives are to; identify and evaluate the location and extent of flooding that occurs within the watershed, and to develop the master plan to mitigate the identified flooding problems.

The Little Manatee River basin offers a slightly different approach for SWFWMD and the local governments to take. This analysis can be orientated toward identification of areas susceptible to flooding, locations with identified water quality problems and areas which require maintenance of water levels (i.e.: wetlands).

As previously discussed, the current Coastal Zone Management program will provide valuable background information for initiation of the stormwater master plan. Additional information to be developed in a stormwater management master plan includes:

- data development and analysis
- field survey and inventory of major drainage facilities
- water quality sampling survey of the stream channel network and representative lakes during both dry and wet seasons.
- survey and mapping of wetland areas and an evaluation of the natural ecosystem conditions.

- Development of 24-hour design storms for the 2-, 5-, 10-, 25-, 50- and 100-year recurrence intervals.

- Hydrologic and hydraulic modeling of the major drainage system and lakes within the watershed to simulate flooding conditions.

- Identification of flooding problems and evaluation of potential mitigative measures.

- Identification of water quality problems and evaluation of potential mitigative measures.

- Development of alternative stormwater management master plans

Since stormwater management in the Little Manatee Basin is regulated by FDER through Chapter 17-25 F.A.C., SWFWMD by Chapter 40D-4 F.A.C., Hillsborough and Manatee Counties, the stormwater master plan will need to incorporate these agencies regulations.

The Surface Water Improvement and Management Program of SWFWMD is actively involved with stormwater management with respect to water quality improvements for Tampa Bay, the District's number one priority water body. The Little Manatee basin can serve as an excellent example to implement protection efforts in advance of development. Currently the SWIM program is prioritizing water bodies in the Tampa Bay watershed for improvements.

Recommended Agency Action

Southwest Florida Water Management District:

- Initiate a stormwater management master plan program for the Little Manatee basin.

- Coordinate with the DER and local governments.

- Include the objectives and recommendations of the SWIM Plan for Tampa Bay (SWFWMD, 1987) into the stormwater management master plan for the Little Manatee River.

- Develop a SWIM plan, in coordination with the stormwater management master plan, for the Little Manatee River sub-basin to the Tampa Bay watershed.

Florida Department of Environmental Regulation:

- Complete the ongoing CZM assessment of the Little Manatee River.

- Coordinate and direct the SWIM plan for the Little Manatee River.

- Ensure implementation of Chapter 17-25 requirements in the master plan and future developments.

- Participate in the SWFWMD stormwater management master plan.

Tampa Bay Regional Planning Council

- Review draft recommendations of the master plan

- Support the SWIM plan through the Agency on Bay Management Advisory Council to the SWIM program.

- Continue to provide technical guidance in the DER-CZM Little Manatee Assessment.

Hillsborough and Manatee Counties:

- Participate, through co-sponsorship with the SWFWMD, in development and implementation of the stormwater management master plan.

- Develop the stormwater utility fee to generate revenues for implementation of master plan results and SWIM recommendations.

- Ensure inclusion of county regulations and recommendations into the master plan and SWIM plan.

Enforcement of Stormwater Controls

Improperly constructed stormwater treatment facilities are identified as a significant problem by many of the individuals surveyed. The actual engineering and design of treatment facilities must be approved by a certified engineer and reviewed by the appropriate agencies before issuance of a permit. However, compliance monitoring has been recognized as the weakest link of the permitting process at this time. Construction verification and "as-built" certification are necessary to ensure proper installation and adequate treatment of the stormwater facility.

With continued problems of funding public positions, the problem of compliance enforcement will continue. A commitment by state and local governments is required since stormwater treatment system design is only as effective as what is actually built. One alternative is dedicating staff to perform as-built inspections on a set number of facilities each year (5-10 percent yearly). Additionally, when a local government applies for delegation of stormwater authority, the DER and SWFWMD can ensure that the local agency has sufficient staff to provide the compliance verifications. As-built certification should include in-situ inspections, i.e. filling the system with water, water quality monitoring.

Recommended Agency Action:

Southwest Florida Water Management District and the Florida Department of Environmental Regulation:

- Designate staff and funding specifically for compliance monitoring and enforcement
- Ensure agencies seeking delegation of authority will provide for compliance verification and inspections.
- Develop program to ensure long-term operation and maintenance of treatment systems within the responsibility of the WMD.
- Develop program to track certification of treatment systems as-built by construction engineers and evaluate against compliance monitoring by SWFWMD and DER staff.
- Tabulate stormwater system effectiveness and success after construction to be applied toward future permitting requirements.

Tampa Bay Regional Planning Council:

- Support compliance monitoring by requiring treatment facility construction verification during the annual monitoring requirements of Developments of Regional Impacts.
- Include 17-25 and 40D-4 F.A.C. requirements and other site specific requirements in Developments of Regional Impact.

Hillsborough and Manatee Counties:

- Designate staff and funding specifically for compliance monitoring and enforcement.
- Develop program to ensure long-term operation and maintenance of treatment systems within the responsibility of the counties.
- Develop programs to track certification of treatment systems and as-built by construction engineers to evaluate against compliance monitoring by county staff.

Agricultural Runoff Controls

The issue raised most often during the interview process was stormwater controls for agricultural activities. Agricultural runoff normally contains loadings of nitrogen and phosphate, herbicides and pesticides, excessive quantities of oxygen demanding substances and coliform bacteria.

Agricultural activity represents one of the largest land uses in the Little Manatee River basin and remains predominately unregulated. The focus of attention by the Southwest Florida Water Management District (SWFWMD) Surface Water Improvements and Management (SWIM) Program is also on urban stormwater management. With the increase of awareness and protective action taken for the estuary and its tributaries, agricultural runoff will be a vital component of any water quality/quantity management program to evaluate and regulate problematic agricultural activities.

Agricultural activities continue to evade most environmental regulations. Regulations not applied to agribusiness development include consumptive water uses and wetland modifications in addition to stormwater management. Existing stormwater practices can easily be applied to agribusiness areas. The open land is more conducive for application of prevailing technology. However, the land is primarily in private ownership and may require assistance and incentive programs for successful implementation.

Management of agricultural runoff must be initiated for all newly created agricultural lands as a priority. Educational programs are required to assist agribusiness in preventing erosion, sedimentation, excess fertilizer, pesticide and herbicide applications. Reduction of non-point source loadings can best be accomplished through prevention rather than stormwater treatment. Eventual stormwater management of existing agricultural areas will be necessary to support water quality maintenance or improvements.

Recommended Agency Action:

Southwest Florida Water Management District:

- Generate a independent audit of the SWFWMD rules and regulation to determine avenues for implementation of stormwater requirements to agricultural lands.
- Immediately apply Chapter 40D-4 requirements for all new agricultural development within the District.
- Coordinate with the DER, counties and Soil Conservation Service to develop an education and technical assistance program with the agricultural industry to identify:
    - affects of agricultural runoff on downstream systems
    - advantages of saving money and water through conservation, while reducing runoff
    - reduce nutrient enrichment by best use of fertilizer and pesticide applications, and
    - retain agricultural lands through prevention of erosion.

- Identify and develop pilot projects in selected areas of the Little Manatee River basin to apply stormwater treatment BMP's on agricultural lands. Provide information gained back to the community.

- The Swim Program should coordinate with the DER CZM study to determine prioritization of sub-basins in the Manatee River basin for reconstruction.

- All agencies should coordinate and cost-share with land owners for reconstruction of prioritized sub-basins in the Little Manatee River.

- The SWFWMD should support an extensive water quality monitoring program before and after agricultural reconstruction in the Little Manatee Basin.

Florida Department of Environmental Regulation:

- Generate an independent audit of the DER rules and regulation to determine avenues for implementation of stormwater requirements to agricultural lands.

- Immediately apply Chapter 17-25 requirements for all new agricultural development.

- Coordinate with the SWFWMD, counties and Soil Conservation Service to develop an education and technical assistance program with the agricultural industry to identify:

    - affects of agricultural runoff on downstream systems

    - advantages of saving money and water through conservation, while reducing runoff

    - reduce nutrient enrichment by best use of fertilizer and pesticide applications, and

    - retain agricultural lands through prevention of erosion.

- Identify and develop pilot projects in selected areas of the Little Manatee River basin to apply stormwater treatment BMP's on agricultural lands. Provide information gained back to the community.

Tampa Bay Regional Planning Council:

- Seek financial assistance to develop a program which will evaluate Best Management Practices applicable to agricultural lands in the Little Manatee basin.

- Support pilot projects in the Little Manatee basin through review of projects by the Council's Agency on Bay Management.

- Support implementation of the SWIM program through guidance by the Agency on Bay Management SWIM Advisory Council.

Hillsborough and Manatee Counties:

- Establish a "Stormwater Utility Fee" to provide sufficient revenues for the regulation, maintenance and rehabilitation of stormwater runoff within the County.

- Generate an independent audit of the County rules and regulation to determine avenues for implementation of stormwater requirements on agricultural lands.

- Coordinate with the SWFWMD, DER and Soil Conservation Service to develop an education and technical assistance program with the agricultural industry to identify:

    - affects of agricultural runoff on downstream systems

    - advantages of saving money and water through conservation, while reducing runoff

    - reduce nutrient enrichment by best use of fertilizer and pesticide applications, and

    - retain agricultural lands through prevention of erosion.

- Identify and develop pilot projects in selected areas of the Little Manatee River basin to apply stormwater treatment BMP's on agricultural lands. Provide information gained back to the community.

Reconstruction of Existing Development

Future consideration of improvements to surface water bodies must implement programs applying stormwater management practices to previously developed areas. Retrofitting, or rehabilitating developed areas, is the process of implementing management of stormwater in areas which were developed previous to stormwater regulation and can include either water quantity or quality.

Runoff from developed areas continues to provide significant pollutant loadings to surface water resources. However, point source loadings from WWTP effluents, industrial discharges and others are quantifiable due to the existing permitting process. Loadings from stormwater runoff are not as identifiable since stormwater comes from a wide variety of sources and locations. General analysis can occur from

ditches, culvert or tributary evaluations where the sources are cumulatively tabulated. Two of the more comprehensive analyses of stormwater runoff loadings are the ongoing analysis of the Little Manatee River and the National Urban Runoff Program (NURP) accomplished for the Hillsborough River during the 1970's.

What information is available identifies urban and agricultural runoff as the major sources of water pollution in Tampa Bay (TBRPC, 1985). Since new development must conform to existing regulations, any net improvements to surface water bodies will require enhancement of older development. Retrofitting should be applied evenly to urban and agricultural areas.

Urban centers may prove to be the most difficult and expensive areas in which to improve runoff conditions. Land acquisition prices are high, with new development often seeking to replace or infill older areas. In addition, pollutant loadings tend to be higher in the urban core due to the intensive development and quantities of impervious surface. Ideally, innovative techniques to utilize available limited lands will be required for urbanized areas. Research and model programs for urban retrofitting is recommended for the State 205(j) program and SWIM program and local agency consideration. Retrofitting of existing uses and application of rules and regulations to new developments is vital for any expected water quality improvements, and other associated benefits, to be achieved in the Little Manatee River basin and the Tampa Bay estuary (Figure 3).

However, with wide public acceptance and commitment, these problems are not insurmountable. Water quality problems in the Tampa Bay region are the result of decades of development and urbanization. Naturally, cures for problems will require a similar time frame for resolution. A framework to begin implementation of stormwater control for predeveloped (not naturally occurring) land uses should include the following:

- Any regulation must address agriculture and urban land uses.
- An inventory of non-point source loadings is required to establish priorities for the greatest improvements.
- Guidance for improvements should be initiated from the state level to assist local governments. This can include seed funds to supplement and support initial or innovative projects.
- The majority of efforts will be on a project by project basis. This single point is important since regulators must be aware of the time frame necessary for improvements. By establishing priorities and long term funding support, projects and improvements can be accomplished on an incremental basis.

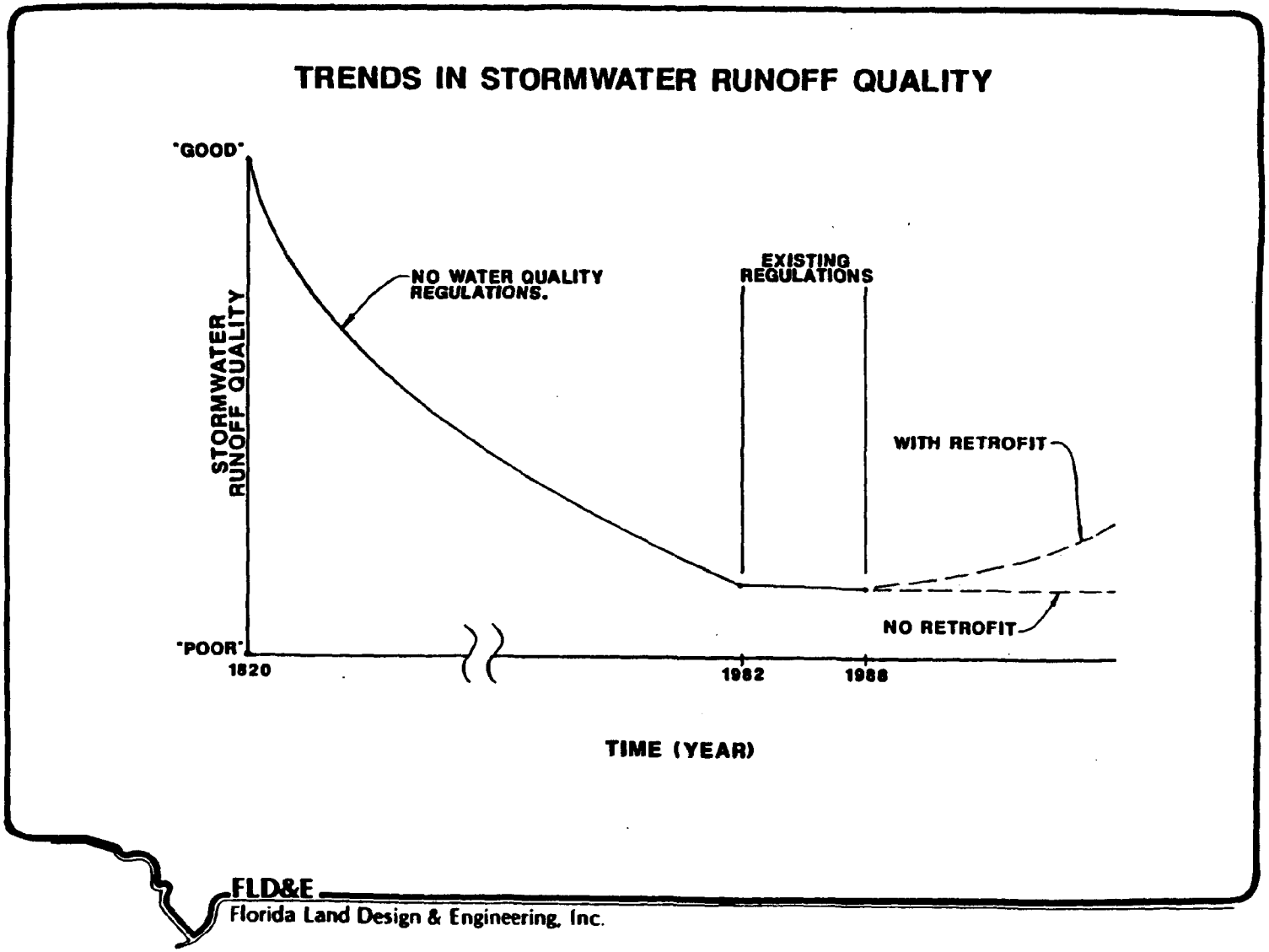

Figure 3. Trends in Stormwater Runoff Quality.

- Initial projects will require some monitoring to ensure adequate treatment levels and identify innovative techniques for future projects.

Public education is necessary to identify long term requirements. Developed areas can be upgraded for compliance on a section-by-section basis, with net improvements achieved over time. Requiring all redevelopment to conform to stormwater requirements in addition to retrofitting will provide parallel programs to facilitate stormwater management for all areas. Little-by-little, area-by-area, progress can be achieved to protect natural communities from perturbations created by stormwater runoff.

A vital component of early retrofitting projects will be monitoring of results, especially innovative systems. Innovative retrofitting projects will provide valuable new information on successes and failures which can be applied to future projects. Design construction techniques and monitoring results should be distributed between state agencies and local governments. Regional Planning Councils can share in the collection and distribution of stormwater management information.

Recommended Agency Action:

Southwest Florida Water Management District:

- Generate an independent audit of the SWFWMD rules and regulation to determine avenues for implementation of stormwater requirements to developments which are lacking stormwater controls.

- Establish legislative responsibility to apply Chapter 40D-4 requirements for all redevelopments projects constructed within the District.

- Establish legislative responsibility to apply Chapter 40D-4 requirements for all existing developments which have been prioritized for improvements within the District.

- Provide technical guidance and seed monies to Local governments for construction of rehabilitation projects in the Little Manatee basin.

- The SWFWMD - SWIM program should continue to identify and prioritize drainage basins in the Little Manatee River and Tampa Bay which require rehabilitation, to improve stormwater quality and quantity.

- Identify and develop pilot projects in selected areas of the Little Manatee River basin to apply stormwater treatment BMP's. Provide information gained back to the community.

- All agencies should coordinate and cost-share with land owners for reconstruction of prioritized sub-basins in the Little Manatee River.

- The SWfWMD should support an extensive water quality monitoring program before and after urban and agricultural reconstruction in the Little Manatee Basin.

Florida Department of Environmental Regulation:

- Generate an independent audit of the DER rules and regulation to determine avenues for implementation of stormwater requirements to developments which are lacking stormwater controls.

- Establish legislative responsibility to apply Chapter 17-25 requirements for all redevelopments projects constructed.

- Establish legislative responsibility to apply Chapter 17-25 requirements for all existing developments which have been prioritized for improvements by DER and SWFWMD.

- Coordinate and direct The SWFWMD - SWIM program to identify and prioritize drainage basins in the Little Manatee River and Tampa Bay which require rehabilitation to improve stormwater quality and quantity.

- Identify and develop pilot projects in selected areas of the Little Manatee River basin to apply stormwater treatment BMP's on agricultural lands. Provide information gained back to the local governments and the community.

- All agencies should coordinate and cost-share with land owners for reconstruction of prioritized sub-basins in the Little Manatee River.

- The DER and SWFWMD should support an extensive water quality monitoring program before and after urban and agricultural reconstruction in the Little Manatee Basin.

- Consider the use of Pollution Recover Trust Fund monies to establish water quality rehabilitation projects for priority areas within the Little Manatee basin.

- Use Section 205 (j) funds to assist in the development of priority rehabilitation pilot projects.

- Funds from the Coastal Zone Management program can be used to develop guidance and public awareness programs for education of the citizenry on the importance of retrofitting projects.

Tampa Bay Regional Planning Council:

- Support pilot projects in the Little Manatee basin through review of projects by the Council's Agency on Bay Management.
- Support implementation of the SWIM program through guidance by the Agency on Bay Management SWIM Advisory Council.
- Assist in the collection of monitoring data and reconstruction techniques for distribution to local governments and potential developments.

Hillsborough and Manatee Counties:

- Establish a "Stormwater Utility Fee" to provide sufficient revenues for the regulation, maintenance and rehabilitation of stormwater runoff within the County.
- Generate an independent audit of the County rules and regulation to determine avenues for implementation of stormwater requirements for developments which are lacking stormwater controls.
- Establish responsibility to apply County stormwater requirements for all existing developments which have been prioritized for improvements by DER and SWFWMD.
- Coordinate and assist The SWFWMD - SWIM program to identify and prioritize drainage basins in the Little Manatee River and Tampa Bay which require rehabilitation to improve stormwater quality and quantity.
- Identify and develop pilot projects in selected areas of the Little Manatee River basin to apply stormwater treatment BMP's on predeveloped lands. Provide information gained back to the community.
- All agencies should coordinate and cost-share with land owners for reconstruction of prioritized sub-basins in the Little Manatee River.

Land Acquisition

The State of Florida has several programs which set aside tax revenues for the purchase of lands to be managed as public lands. Several acquisition programs are for the express purpose of protecting water resources or have at least the indirect effect of improving water resource management in a particular area.

In 1979 the Conservation and Recreational Lands Trust Fund (CARL) program was established by the Florida Legislature. Funds are generated from the state severance tax on oil, gas and solid minerals.

Up to $20 million is collected each year for purchases to protect environmentally endangered lands; natural floodplains, marshes or estuaries; wilderness areas and wildlife management areas; and for the restoration of altered ecosystems (FSU, 1984). High priority is given to lands in or near counties with highly concentrated populations that cannot be adequately protected by development regulations alone.

The Water Management Lands Trust Fund was created in 1981 and is known as the Save our Rivers Program. Funds for land purchases under this program are derived from the excise tax on real estate deeds, stock certificates and other official documents. This amounts to about $85 million per year statewide. The funds are distributed by the Water Management Districts and are to be used for acquiring lands "necessary for water management, water supply, and the conservation and protection of water resources."

The Hillsborough County Parks Department established a committee to oversee creation of a public referendum to collect a quarter mill ad valorem (property) tax, in 1987 (TBRPC, 1989). Hillsborough County has defined environmental lands as those lands which shall have as their purpose the conservation and protection of environmentally unique, irreplaceable and valued ecological resources. The primary purpose of acquiring the lands is for resource protection, but all lands are open for public use and enjoyment.

Manatee County has a more limited land acquisition program for environmentally sensitive lands. Currently the Manatee County Land Acquisition Technical Advisory Committee recommends to the Board of County Commission the acquisition of Emerson Point as the top priority for purchase. No additional lands are under consideration at this time for environmental purchase by the county. Both counties have the ability to acquire lands for stormwater treatment, if necessary.

With the multitude of programs established for purchase of environmentally important parcels, coordination of acquisition efforts is necessary. The CARL program and Hillsborough County are actively seeking to purchase lands at the mouth of the Little Manatee River, Little Cockroach Bay and Cockroach Bay proper. Hillsborough County has portions of the Little Manatee River as the number one priority in the county for acquisition.

Agencies with active environmental land acquisition programs can also provide public lands for stormwater improvements. Borrow pits could be tied into problematic tributaries to promote flood attenuation or pollutant removal through sedimentation. As reconstruction occurs, public land purchase will become necessary to acquire lands for stormwater treatment. Land acquisition could easily be a major component of future stormwater renovation projects in developed areas.

State and local lands previously acquired for recreation should be evaluated for potential construction of stormwater treatment facilities in priority areas. Parks can provide multi-use facilities during rain

events. Softball/soccer fields can serve as dry detention areas for water quality, or tributaries can be allowed to overflow into special recreational fields to provide storage capacities.

Recommended Agency Action:

Southwest Florida Water Management District:

- Develop a complimentary program with the Save Our Rivers program to purchase lands for recreation, preservation and stormwater management.

- Coordinate with the results of the SWIM stormwater basin analysis to determine priority basins for improvement and list SWFWMD - SOR resources in the priority basins for the Little Manatee River.

- Develop alternatives for improvement in priority basins using recreational lands that can potentially provide stormwater treatment.

- Participate on a coordinated land acquisition committee sponsored by the TBRPC.

Tampa Bay Regional Planning Council:

- Develop a committee of the Council's Agency on Bay Management to coordinate regional environmental land acquisition programs in the Little Manatee basin and Tampa Bay region.

- Assist in the development of alternative uses and innovative methods to treat stormwater on public lands.

- Support implementation of the SWIM program through guidance of the Agency on Bay Management SWIM Advisory Council.

Hillsborough County:

- Coordinate with the SWIM program to identify priority basins for improvement and potential lands for acquisition by the County.

- Renew the Hillsborough County Endangered Land Acquisition and Parks Programs (ELAPP) for purchase of sensitive lands through approval of a property tax referendum.

- Establish a "Stormwater Utility Fee" to provide sufficient revenues for the regulation, maintenance and rehabilitation of stormwater runoff within the County. Funds from the program can be structured to provide lands for stormwater improvements.

- Participate on a coordinated land acquisition committee sponsored by the TBRPC.

Manatee County:

- Coordinate with the SWIM program to identify priority basins for improvement and potential lands for acquisition by the County.
- Establish a reoccurring land acquisition program for purchase of sensitive lands through approval of a property tax referendum.
- Establish a "Stormwater Utility Fee" to provide sufficient revenues for the regulation, maintenance and rehabilitation of stormwater runoff within the County. Funds from the program can be structured to provide lands for stormwater improvements.
- Participate on a coordinated land acquisition committee sponsored by the TBRPC.

Additional Items

Area representatives identified additional recommendations on many aspects of stormwater management, which warrants a special section devoted to stormwater system analysis and land use mechanisms. The analysis is intended for general discussion and is not oriented toward a particular watershed or jurisdiction.

Stormwater System Analyses

The majority of individuals recommended the use of wet detention systems to treat stormwater runoff. Primary advantages include the lower maintenance required after construction and the added benefit of providing wetland habitat.

Endangered species can benefit by the design of biological treatment systems to supplement habitat needs on-site. One example is the use of wet detention systems by wood storks (Mycteria americana) for foraging, a common occurrence in the Tampa Bay region. Design of wet detention systems incorporating littoral shelves, near wood stork roosting areas will provide habitat for the endangered species while ensuring water quality treatment.

Filtration stormwater systems were identified as not effective in treating runoff, however. Filtration system design is considered workable but not practical since actual construction often varies from the proposed design. The filtration media commonly becomes clogged and requires high maintenance to maintain the discharge. Since many governments are responsible for drainage maintenance, systems requiring minimal maintenance are strongly encouraged. Additionally, filtration systems do not provide the habitat components of wet detention.

The use of silt screens and hay bales to control erosion and turbidity has received little support from representative stormwater managers. Again, the issue is maintenance. The silt screens and hay bales are effective, if installed properly. However, after storm events, blowout of the screen or bales allows erosion and sedimentation to occur. If the screens or bales are not reinstalled properly the problems will continue with each successive storm. A required periodic examination and maintenance program is essential if silt screen and hay bale lines are included in permit requirements.

Several new approaches to manage stormwater were identified during the interview process. Extended detention systems are recommended to allow additional pollutant removal to occur through sedimentation, biological assimilation and decomposition. By detaining runoff over longer periods of time, degradation and consumption of the majority of oxygen demanding substances within the stormwater treatment facility occurs before discharge into state waters.

Another approach which warrants future evaluation includes the construction of high flow/low flow treatment facilities. During normal rainfall events (under one inch) the runoff is channeled into one treatment system capable of handling the design storm. Storm events generating a greater amount of runoff would "pop-over" to another treatment facility to handle the excessive quantities of rainfall generated by the storm. This system prevents a concentrated slug of nutrient enriched runoff carrying the pollutant load directly through the stormwater facility during extreme storm events.

The high flow/low flow facility can be additionally applied to mixed use treatment facilities; as previously mentioned. The playing fields (football, soccer) could serve as the high flow treatment area. The application of grassed swales to divert and treat runoff can provide walkways or terraces along playing fields. Further evaluation of mixed use systems with special consideration to urbanized areas is recommended.

Numerous individuals have suggested multiple layers of treatment before discharge to state waters. A chain of lakes will promote water quality within each successive lake system. The outfall of a treatment facility into wetlands will provide another polishing treatment stage. The same concept can be applied to bleed down quantities flowing through a drainfield for further filtration.

Flocculants can be used in stormwater control facilities to assist in settling out suspended matter and potential pollutants. Flocculants aid runoff water quality improvement by causing materials to adhere together and settle out of solution at an accelerated rate. Since many potential pollutants attach to suspended particles (i.e.: metals, hydrocarbons) the act of combining particles to promote sedimentation can accelerate pollutant removal from the water column. The process of flocculation has a great potential in urban areas with limited area for stormwater treatment ponds where water quality treatment before discharge to surface waters is required.

Irrespective of stormwater treatment facility design, considerations should take advantage of existing features on-site. Topography should be maintained for stormwater controls to mimic existing flow patterns and drainage basins. Areas of high recharge to aquifer systems can consider dry detention to facilitate recharge capabilities of the property. As previously, mentioned enhancing habitat for listed species through development of littoral shelves and drawdown pools within treatment ponds will support objectives to improve listed species populations.

Wetlands identified for preservation can be used as a polishing stage for stormwater effluent after treatment, or for rehydration of previously impacted systems. Stormwater managers and consultants need to consider the ecosystem approach in the design of stormwater management facilities. Programs such as this analysis should assist in identifying design alternatives and proactive planning.

Land Use Practices

Land use decisions affect alteration of land to allow development. Stormwater can be managed through the use of land use regulations to prevent unintentional impacts to surface water resources. Water quality treatment, in a sense, can be accomplished through density controls. Less intensive developments do not require the degree of impervious surfaces, thus allowing natural maintenance of water conditions through percolation, evapotranspiration and wetland assimilation.

Transfer of density alternatives will promote protection of natural water conveyance and treatment. Concentrating development away from tributaries, wetlands and significant upland features buffer water quality and habitat benefits. The 100-year floodplain is recommended for preservation as one ecological unit, by providing water conveyance, wetland communities, and upland transitional buffer zones.

Land use decisions can be applied by local governments to condemn lands required for stormwater treatment. The taking of lands should only be accomplished for public use after avenues for just compensation have been explored. Lands could also be traded to provide sufficient area for treatment.

Local governments also have the flexibility to develop land use criteria for impervious surfaces. Not all parking lots need to be impervious, as an example. Criteria development will promote awareness to alternatives for impervious surfaces, in addition to requiring compliance with requirements.

Development of stormwater management plans may identify regional management facilities, thereby providing the potential for greatest treatment for the largest area. Existing borrow pits can potentially be

tied into tributary systems for large settling basins. Many large borrow pits in south Hillsborough County receive agricultural runoff from ditches in the area and provide significant informal treatment. Additional evaluation and identification of regional systems is necessary.

VII. SUMMARY

The Tampa Bay area is one of the fastest growing regions in the state. The impacts of this growth on the Tampa Bay estuarine system have been the subject of numerous scientific investigations and have triggered a variety of efforts aimed at controlling point sources of pollution, habitat destruction and other deleterious activities. However, it has become abundantly clear that if such efforts are to be successful, they must be better coordinated and conducted within a broader, basin-wide management perspective. Major obstacles confronting basin-wide management in the area include the size and complexity of drainage areas around the Bay, a lack of detailed information upon which to base needed policies and ordinances, and the rapid urbanization of critical watersheds.

The priority area of Tampa Bay selected for this basin-wide study approach is the Little Manatee River watershed, located on the eastern side of the bay in Hillsborough and Manatee Counties. This is a particulary good area for a study of this nature, since the area is relatively undeveloped. However, pressures to develop the Little Manatee River watershed make it imperative that the drainage basin be managed as an ecological and hydrologic unit with particular emphasis on managing stormwater runoff from new development and maintaining natural flow regimes. It is important that a management framework be in place prior to actual development.

The recommendations section is broken down into the following areas of action which describe opportunities to improve and coordinate stormwater management in the Little Manatee River basin:

- stormwater management master plan
- enforcement of stormwater controls
- agricultural runoff controls
- reconstruction of existing development
- land acquisition
- stormwater system analysis, and
- land use practices.

Implementation of the recommendations will require considerable coordination between many layers of government for success. However, the results of water quality protection programs detailed within this report will greatly enhance the quality of life for all who depend on the river.

VIII. ACKNOWLEDGEMENTS

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APPENDIX A.

Florida Department of Environmental Regulation
Chapter 17-25, F.A.C.

Regulation of Stormwater Discharge

CHAPTER 17-25

REGULATION OF STORMWATER DISCHARGE

17-25.001 Scope.

(1) The discharge of untreated stormwater may reasonably be expected to be a source of pollution of waters of the state and is, therefore, subject to Department regulation. The Department shall prevent pollution of waters of the state by discharges of stormwater, to ensure that the designated most beneficial uses of waters, as prescribed by Chapter 17-3, Florida Administrative Code, are protected.

(2) A permit under this chapter will be required only for new stormwater discharge facilities as defined herein. This provision shall not affect the Department's authority to require appropriate corrective action, pursuant to Sections 403.121 - 403.161, Florida Statutes, whenever existing facilities cause or contribute to violations of state water quality standards.

(3) Stormwater discharges to groundwaters shall be regulated under the provisions of Section 17-4.245, F.A.C. and other applicable rules of the Department.

(4) The Department intends that, to the greatest extent practicable, the provisions of this chapter be delegated to either local governments or water management districts seeking such delegation.

Specific Authority: 403.061, F.S.
Law Implemented: 403.021, 403.061, 403.101(1), F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84. Previously numbered as 17-25.01.

17-25.020 Definitions.

(1) "Artificial Watercourse" means a man-made waterway that was totally dredged or excavated prior to October 1, 1984 and which connects formerly

isolated, nonjurisdictional wetlands to other waters. The Department shall bear the burden to show that such artificial watercourse was not totally dredged or excavated or that the connected wetlands were formerly jurisdictional.

(2) "Completion of Construction" means the time at which the stormwater discharge facility is first placed into operation or when the project passes final building inspection or when the project receives a certificate of occupancy, whichever comes first.

(3) "Conservation Plan" means a formal document, prepared or approved by a local Soil and Water Conservation District Board organized pursuant to Chapter 582, Florida Statutes, which outlines a system of management practices to control soil erosion, reduce sediment loss or protect the water quality on a specific parcel of property.

(4) "Construction" means any on-site activity which will result in the creation of a new stormwater discharge facility, including the building, assembling, expansion, modification or alteration of the existing contours of the property, the erection of buildings or other structures, or any part thereof, or land clearing.

(5) "Detention" or "To Detain" means the collection and temporary storage of stormwater in such a manner as to provide for treatment through physical, chemical, or biological processes with subsequent gradual release of the stormwater.

(6) "Engineer" means a Professional Engineer registered in Florida, or other person exempted pursuant to the provisions of Chapter 471, Florida Statutes, who is competent in the fields of hydrology and stormwater pollution control.

(7) "Effective Grain Size" means the diameter of filter sand or other aggregate that corresponds to the 10 percentile finer by dry weight on the grain size distribution curve.

(8) "Filtration or "To Filter" means the selective removal of suspended matter from stormwater by passing the water through at least 2 feet of suitable fine textured granular media such as porous soil, uniformly graded sand and gravel, or other natural or artificial aggregate, which may be used in conjunction with filter fabric and/or underdrain pipe.

(9) "Intermittent Watercourse" means a stream or waterway that flows only at certain times of the year, flows in direct response to rainfall, and is normally an influent stream except when the groundwater table rises above the normal wet season level.

(10) "New Stormwater Discharge Facility" means a stormwater discharge facility which was not in existence on February 1, 1982, or for which a completed stormwater discharge, dredge or fill, or other Department permit or license application had not been received before February 1, 1982, or an existing stormwater discharge facility which is modified, as specified in Section 17-25.040(3), Florida Administrative Code, on or after February 1, 1982. A stormwater discharge facility approved or found to be exempt by the Department before February 1, 1982, or a facility which had been determined by the Department not to be significant pursuant to 17-4.248(5) before February 1, 1982, or a facility exempted pursuant to Section 17-25.030(2) shall not be

considered a new stormwater discharge facility unless modified pursuant to Section 17-25.040(3).

(11) "Regional Stormwater Discharge Facility" means a stormwater discharge facility which is permitted pursuant to Section 17-25.040(6) and is designed and constructed to accept stormwater from multiple parcels within the drainage area served by the regional facility. Drainage area refers to the land or development that is served by and/or contributes stormwater to the regional facility.

(12) "Retention" or "To Retain" means the prevention of, or to prevent the discharge of, a given volume of stormwater runoff into surface waters of the state by complete on-site storage.

(13) "Stormwater" means the flow of water which results from, and which occurs immediately following, a rainfall event.

(14) "Stormwater Discharge Facility" means a stormwater management system which discharges stormwater into surface waters of the State.

(15) "Stormwater Management System" means the designed features of the property which collect, convey, channel, hold, inhibit or divert the movement of stormwater.

(16) "Swale" means a manmade trench which:

(a) has a top width-to-depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1 foot vertical; and,

(b) contains contiguous areas of standing or flowing water only following a rainfall event; and,

(c) is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and,

(d) is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge.

(17) "Uniformity Coefficient" means the number representing the degree of homogeneity in the distribution of particle sizes of filter sand or other granular material. The coefficient is calculated by determining the D^{60}/D^{10} ratio where D^{10} and D^{60} refer to the particle diameter corresponding to the 10 and 60 percentile of the material which is finer by dry weight.

(18) "Waters" are as defined in Section 403.031(3), Florida Statutes.

(19) "Wetlands" means, for the purposes of this rule, those waters which are dominated by those plant species listed in Section 17-4.020(18) or Section 17-4.022, F.A.C. and which meet the conditions specified in Section 17-25.042(2), F.A.C.

(20) "Wetlands Stormwater Discharge Facility" means a new stormwater discharge facility which incorporates those wetlands identified in Section 17-25.042(2), F.A.C. into the stormwater management system to provide stormwater treatment.

Specific Authority: 403.061, F.S.
Law Implemented: 403.021, 403.031, 403.061, 403.913, F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 5-8-85. Previously numbered as 17-25.02.

17-25.020(10) -- 17-25.020(History)

05-14-86

17-25.025 Design and Performance Standards.

The following design and performance standards are established for the purpose of determining compliance with this chapter, however, in some instances they may not result in compliance with water quality standards set forth in Chapters 17-3 and 17-4, F.A.C. No discharge from a stormwater discharge facility shall cause or contribute to a violation of water quality standards in waters of the state. Unless the applicant provides reasonable assurance that the discharge will not cause or contribute to a violation of water quality standards in waters of the state, the Department may require more stringent design and performance standards than are otherwise required by this chapter:

(1) Detention basins shall again provide the capacity for the specified treatment volume of stormwater within 72 hours following a storm event.

(2) Filtration systems shall have pore spaces large enough to provide sufficient flow capacity so that the permeability of the filter is equal to or greater than the surrounding soil. The design shall ensure that the particles within the filter do not move. When sand or other fine textured aggregate other than natural soil are used for filtration, the filter material should be of a quality sufficient to satisfy the following requirements:

(a) Washed (less than 1 percent silt, clay and organic matter) unless filter cloth is used which is suitable to retain the silt, clay and organic matter within the filter;

(b) Uniformity coefficient 1.5 or greater; and

(c) Effective grain size of 0.20 to 0.55 millimeters in diameter. These criteria are not intended to preclude the use of multilayered filters nor the use of materials to increase ion exchange, precipitation or pollutant adsorption capacity of the filter.

(3) Filtration systems shall be designed with a safety factor of at least two unless the engineer affirmatively demonstrates based on plans, test results, calculations or other information that a lower safety factor is appropriate for the specific site conditions. Examples of how to apply this factor include but are not limited to reducing the design percolation rate by half, doubling the length of underdrain or designing for the required drawdown within 36 hours.

(4) Retention basins shall again provide the capacity for the given volume of stormwater within 72 hours following the storm event. The additional storage volume must be provided by a decrease of stored water caused only by percolation through soil, evaporation or evapotranspiration.

(5) Swales shall be designed to percolate 80% of the runoff from a three-year, one-hour design storm within 72 hours after a storm event, assuming average antecedent conditions.

(6) Unless applicable local regulations are more restrictive, for purposes of public safety, permanently wet retention and detention basins shall either be fenced or otherwise restricted from public access or contain side slopes that are no steeper than 4:1 (horizontal:vertical) out to a depth of two feet below the control elevation. All side slopes shall be stabilized by either vegetation or other materials to minimize erosion and subsequent sedimentation of the basins.

(7) Erosion and sediment control best management practices shall be used as necessary during construction to retain sediment on-site. These management practices shall be designed by an engineer or other competent professional experienced in the fields of soil conservation or sediment control according to specific site conditions and shall be shown or noted on the plans of the stormwater management system. The engineer or designer shall furnish the contractor with information pertaining to the construction, operation and maintenance of the erosion and sediment control practices.

(8) Stormwater discharge facilities which receive stormwater from areas which are a potential source of oil and grease contamination in concentrations exceeding applicable water quality standards shall include a baffle, skimmer, grease trap or other mechanism suitable for preventing oil and grease from leaving the stormwater discharge facility in concentrations that would cause or contribute to violations of applicable water quality standards in the receiving waters.

(9) Stormwater discharge facilities which directly discharge to Outstanding Florida Waters shall include an additional level of treatment equal to fifty percent of the treatment criteria specified in Section 17-25.035(1)(b) or Section 17-25.040 or Section 17-25.042, F.A.C.

Specific Authority: 403.061, 403.912, F.S.
Law Implemented: 403.021, 403.061, 403.101(1), F.S.
History: New 1-26-84, Amended 3-28-84, 5-8-85.

17-25.027 Legal Operation/Maintenance Entity Requirements.

(1) The Department considers the following entities to be acceptable for meeting the requirements necessary to ensure that a stormwater discharge facility will be operated and maintained in compliance with the requirements of this chapter and other Department regulations:

(a) local governmental units including counties or municipalities, or Municipal Service Taxing Units.

(b) active water control districts pursuant to Chapter 298 Florida Statutes or drainage districts created by special act, or Community Development Districts pursuant to Chapter 190 Florida Statutes, or Special Assessment Districts pursuant to Chapter 170 Florida Statutes.

(c) state or federal agencies.

(d) duly constituted communication, water, sewer, electrical or other public utilities.

(e) the property owner or developer is normally not acceptable as a responsible entity when the property is intended to be sold to third parties. However, the property owner or developer may be acceptable under one of the following circumstances:

1. Written proof in the appropriate form by either letter or resolution, that a governmental entity or such other acceptable entity as set forth in paragraphs (a)-(c) above, will accept the operation and maintenance of the stormwater management and discharge facility at a time certain in the future.

2. Bonding or other assurances sufficient to operate and perform anticipated maintenance on stormwater facilities.

(f) profit or non-profit corporations including homeowners associations,

property owners associations, condominium owners associations or master associations shall be acceptable only under certain conditions that ensure that the corporation has the financial, legal and administrative capability to provide for the long term operation and maintenance of the stormwater discharge facility.

(2) Entity Requirements.

(a) if a Homeowner, Property Owner, Condominium or Master Association is proposed, the owner or developer must submit the Articles of Incorporation, Declaration, Restrictive Covenants, Deed Restrictions or such other organizational or operational documents affirmatively taking responsibility for the operation or maintenance of the stormwater discharge facility.

(b) the Association shall have sufficient powers reflected in its organizational or operational documents to:

1. operate and maintain the stormwater management system and the stormwater discharge facility as exempted or permitted by the Department.

2. establish rules and regulations.

3. assess members.

4. contract for services (if the Association contemplates employing a maintenance company) to provide the services for operation and maintenance.

5. the Association shall exist in perpetuity; however, if the Association is dissolved, the Articles of Incorporation must provide that the stormwater management system and discharge facility shall be maintenanced by an entity as set forth in paragraph (1) of this rule.

(3) Phased Projects.

(a) if an Operation/Maintenance entity is proposed for a project which will be constructed in phases, and subsequent phases will utilize the same stormwater management facilities as the initial phase or phases, the entity shall have the ability to accept responsibility for the operation/maintenance of stormwater discharge facility for future phases of the project.

(b) if the development scheme contemplates independent operation/maintenance entities for different phases, and the stormwater management system is integrated throughout the project, the entities, either separately or collectively shall have the responsibility and authority to operate and maintain the stormwater management system and discharge facility for the entire project. That authority shall include cross easements for stormwater management and the ability to enter and maintain the various facilities, should any sub-entity fail to maintain a portion of the stormwater management system or discharge facility within the project.

(4) The applicant shall be an acceptable entity from the time construction begins until the stormwater discharge facility is dedicated to and accepted by an established legal entity pursuant to (1) above. The applicant shall provide proof of the existence of an entity pursuant to (1) above or of the future acceptance of the facility by an entity described in (1) above prior to initiating construction.

(5) The provisions of this section shall become effective on October 1, 1985.

Specific Authority: 403.061, 403.087, 403.088, F.S.
Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.182, F.S.
History: New 5-8-85.

17-25.027(1)(f) -- 17-25.027(History)

05-14-86

17-25.030 Exemptions.

(1) The following types of new stormwater discharge facilities are exempt from the notice and permit requirements of this chapter:

(a) facilities designed to accomodate only one single family dwelling unit, duplex, triplex, or quadruplex, provided the single unit, duplex, triplex or quadruplex is not part of a larger common plan of development or sale;

(b) facilities which are designed to serve single family residential projects, including duplexes, triplexes and quadruplexes, of less than 10 acres total land area and which have less than 2 acres impervious surface provided that the facilities:

1. comply with all regulations or ordinances applicable to stormwater management and adopted by a city or county; and

2. are not part of a larger common plan of development or sale; and

3. discharge into a stormwater discharge facility exempted or permitted by the Department under this chapter which has sufficient capacity and treatment capability as specified in this chapter and is owned, maintained, or operated by a city, county, special district with drainage responsibility, or water management district; however, this exemption does not authorize discharge to a facility without the facility owner's prior written consent; or

4. discharge into a stormwater discharge facility which has sufficient capacity and is part of a master drainage plan adopted by a city or county; however, this exemption does not authorize discharge to a facility without the facility owner's prior written consent.

(c) stormwater discharge facilities whose functioning treatment components consist entirely of swales. However, this exemption is valid only if the swale, as constructed, meets or exceeds the requirements specified in Section 17-25.020(16) and Section 17-25.025(5).

(d) facilities which discharge into a regional stormwater discharge facility which is permitted pursuant to Section 17-25.040 where the appropriate treatment criteria specified in this chapter and applied to the permitted regional facility are met by the discharge; however, this exemption does not authorize discharge to the permitted regional facility without the facility owner's prior written consent.

(e) facilities for agricultural lands, provided those facilities are part of an approved Conservation Plan; however, if the Conservation Plan is not implemented according to its terms, this exemption shall be void; and

(f) facilities for silvicultural lands, provided that the facilities are constructed and operated in accordance with the Silviculture Best Management Practices Manual (1979), published by the State of Florida, Department of Agriculture and Consumer Services, Division of Forestry, which is adopted and made a part of this rule by reference. A copy of this manual may be obtained by writing the Department of Agriculture, Division of Forestry, 3125 Conner Boulevard, Tallahassee, Florida, and may be inspected at all Department of Environmental Regulation offices.

17-25.030(1) -- 17-25.030(1)(f)

05-14-86

(2) Within the geographical area for which the Department has delegated stormwater permitting to the Southwest Florida Water Management District, the following types of new stormwater discharge facilities are exempt from the permitting requirements of this chapter provided that the owner files notice and an engineer certifies to the District, on forms provided by the District, at least 30 days prior to construction that the discharge facility will meet the criteria specified below, and provided that an entity responsible for operation and maintenance of the proposed facility has been determined. Furthermore, an engineer shall certify on forms provided by the District, within 30 days after completion of construction that the new stormwater discharge facility, as constructed, qualifies for exemption under this section. The District may require that the owner and engineer furnish appropriate design analyses, calculations, drawings, specifications and other information to describe, verify and document that the proposed stormwater discharge facility qualifies for exemption according to this section.

(a) facilities which discharge into a stormwater discharge facility which is permitted pursuant to section 17-25.040 or exempt pursuant to section 17-25.030 where the appropriate treatment criteria specified in this chapter and applied to the permitted or exempt facility are not exceeded by the discharge; however, this exemption does not authorize discharge to permitted or exempt facilities without the facility owners prior written consent; or,

(b) facilities which provide retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for projects or project subunits with drainage areas less than 100 acres, facilities which provide retention, or detention with filtration, of the first one half inch of runoff. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment pursuant to Section 17-25.025(9), F.A.C.; or,

(c) modification or reconstruction by a city, county, state agency, special district with drainage responsibility, or water management district of an existing stormwater management system which is not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designated uses of waters of the state.

(d) facilities of stormwater management systems that include a combination of management practices including but not limited to retention basins, swales, pervious pavement, landscape or natural retention storage that will provide for the percolation of the runoff from a three-year one-hour design storm.

Specific Authority: 403.061, 403.087, 403.088, 403.504, F.S.
Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.121, 403.141, 403.161, 403.182, 403.502, 403.702, 403.708, F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 3-28-84, 5-8-85. Previously numbered as 17-25.03.

17-25.035 Stormwater General Permits.

(1) Except in the geographical area for which the Department has delegated stormwater permitting to the Southwest Florida Water Management

District, the following types of new stormwater discharge facilities may be constructed pursuant to general permit as specified in Section 17-4.710, F.A.C. This general permit shall not expire and shall not be subject to Section 17-4.540(13) unless suspended or revoked in accordance with Section 17-4.530(5).

(a) facilities which discharge into a stormwater discharge facility which is permitted pursuant to Section 17-25.040 or Section 17-25.035(1)(b) or (d), F.A.C. or which was previously approved pursuant to a noticed exemption under Section 17-25.030 where the appropriate treatment criteria specified in this chapter and applied to the permitted or exempt facility are not exceeded by the discharge; however, this does not authorize discharge to the permitted or exempt facility without the facility owner's prior written consent; or,

(b) facilities which provide retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for projects or project subunits with drainage areas less than 100 acres, facilities which provide retention, or detention with filtration, of the first one half inch of runoff. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment pursuant to Section 17-25.025(9), F.A.C.; or,

(c) modification or reconstruction by a city, county, state agency, special district with drainage responsibility, or water management district of an existing stormwater management system which is not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designated uses of waters of the state; or,

(d) facilities of stormwater management systems that include a combination of management practices including but not limited to retention basins, swales, pervious pavement, landscape or natural retention storage that will provide for the percolation of the runoff from a three-year one-hour design storm.

Specific Authority: 403.814(1), 403.912, F.S.
Law Implemented: 403.061, 403.087, 403.088, 403.121, 403.141, 403.161, 403.182, 403.502, 403.702, 403.708, 403.814, F.S.
History: New 5-8-85.

17-25.040 Construction Permit Requirements for New Stormwater Discharge Facilities.

(1) Any person intending to construct a new stormwater discharge facility, except as exempted pursuant to Section 17-25.030, Florida Administrative Code, or as noted in Section 17-25.035, or as permitted in Section 17-25.042, or as noted in Section 17-25.060, Florida Administrative Code, shall apply to the Department for a construction permit, using forms provided by the Department, prior to commencement of construction of the stormwater discharge facility. In a geographical area where delegation has occurred, pursuant to Section 17-25.050, Florida Administrative Code, application shall be made pursuant to the provisions of the rules of the entity receiving the delegation.

(2) Construction of a new stormwater discharge facility shall not be

undertaken without a valid construction permit as required pursuant to this section.

(3) Modifications to an existing stormwater management system that will increase the discharge of the stormwater discharge facility beyond its previously designed and constructed capacity, or increase pollution loading, or change points of discharge, except for emergency repairs, are considered new stormwater discharge facilities for purposes of this chapter.

(4) A construction permit may be issued to the applicant, upon such conditions as the Department may direct, only if the applicant affirmatively provides the Department with reasonable assurance based on plans, test results and other information, that the construction, expansion, modification, operation, or activity of the stormwater discharge facility will not discharge, emit, or cause pollution in contravention of Department standards, rules or regulations.

(5) A showing by the applicant that the facility design will provide treatment equivalent to either retention, or detention with filtration, as described in this Chapter, of the runoff from the first one inch of rainfall; or, as an option for projects or project subunits with drainage areas less than 100 acres, the first one half inch of runoff, shall be presumed to provide reasonable assurance pursuant to subsection (4) above, provided that adequate provisions have been made for operation and maintenance of the proposed facility. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment as specified in Section 17-25.025(9).

(6) Regional stormwater discharge facilities shall be permitted upon application and a showing by the applicant that:

(a) the facility will provide treatment equivalent to either retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for facilities with a drainage area less than 100 acres, the first one half inch of runoff; and,

(b) facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment as specified in Section 17-25.025(9); and,

(c) the facility is designed to meet the treatment criteria specified in (a) or (b) above for projected future land use conditions and associated stormwater volumes; and,

(d) the owner of the facility notifies the Department on a semi-annual basis, on forms provided by the Department, of all new projects and their associated stormwater volumes that have been allowed to discharge stormwater into the regional facility and certifies that the maximum allowable treatment volume of stormwater has not been exceeded.

(e) adequate provisions have been made for the operation and maintenance of the proposed facility.

(7) In otherwise determining whether reasonable assurance has been provided, the Department shall, where appropriate, consider:

(a) whether best management practices are proposed, such as those described in "A Manual of Reference Management Practices for Urban Activities (July, 1978)", "A Manual of Reference Management Practices for Construction Activities (December, 1977)", "A Manual of Reference Management Practices for

Agricultural Activities (November 1978)", "Silviculture Best Management Practices Manual (1979)", "Stormwater Management Manual (October 1981)", or best management practices described in manuals adopted by the Environmental Regulation Commission pursuant to Section 17-25.050, or other appropriate best management practices. The manuals listed above by name are adopted and made a part of this rule by reference. Copies of these documents may be obtained by writing the Department, and may be inspected at all Department offices;

(b) the public interest served by the discharge;

(c) the probable efficacy and costs of alternative controls;

(d) whether the proposed water quality benefits are reasonably related to the costs of the controls; and

(e) whether reasonable provisions have been made for the operation and maintenance of the proposed facility.

Specific Authority: 403.031, 403.061, 403.912, F.S.
Law Implemented: 403.021, 403.031, 403.061, 403.087, 403.088, F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 3-28-84, 5-8-85. Previously numbered as 17-25.04.

17-25.042 Permit Requirements for Wetlands Stormwater Discharge Facilities.

(1) The wetlands stormwater discharge facility performance standards and other provisions relating to such facilities are an initial but necessary step by the Department in a field in which there exists limited knowledge. In an effort to further refine the state's wetlands stormwater discharge facility policies, monitoring data and other pertinent information relating to the performance standards will be collected and analyzed and periodic reports of the results of this monitoring shall be made available to the public. The Department must attempt to ensure that the wetlands stormwater discharge facility is compatible with the ecological characteristics of the wetlands utilized for stormwater treatment and to ensure that water quality standards will not be violated by discharges from wetlands stormwater discharge facilities. To achieve these goals, specific performance standards are set forth in this chapter. However, recognizing the complexities and concerns of implementing wetlands stormwater treatment performance standards, the Department shall review the monitoring data and other pertinent information on a regular basis. The Department shall present the information to the Commission at a public hearing no later than April 1, 1989. Unless the Commission affirmatively determines that the performance standards remain appropriate, or amends them as it deems necessary, Section 17-25.042(6) shall be repealed effective April 1, 1989.

(2) The wetlands to be used for stormwater management are those:

(a) which are connected to other waters by artificial watercourses; or

(b) which are connected to other waters solely by an intermittent watercourse.

(3) Any person who owns or has written authorization to use a wetland for stormwater treatment shall apply to the Department for a wetlands stormwater discharge facility permit, using forms provided by the Department, and shall receive such permit prior to commencement of construction of the stormwater

discharge facility. The application shall be processed by the Department according to the procedures of Chapter 17-4, F.A.C.

(4) A wetlands stormwater discharge facility permit may be issued to the applicant, upon such conditions as the Department may direct, only if the applicant affirmatively provides the Department with reasonable assurance based on plans, test results or other information, that the construction, operation, or activity of the stormwater discharge facility shall not emit, or cause pollution in downstream waters in contravention of Department standards, rules or regulations.

(5) In the review of wetlands stormwater discharge facility permit applications, the Department shall consider the following:

(a) compliance of the wetlands stormwater discharge facility permit with the performance standards specified in Section 17-25.042(6), F.A.C.

(b) if the applicant is unable to show compliance with the performance standards in Section 17-25.042(6), the applicant may qualify for a wetlands stormwater discharge facility permit using alternative design and performance standards approved by the Department provided that the use of the wetlands is compatible with the ecological characteristics of the wetland and the applicant complies with Section 17-25.042(4), F.A.C.

(c) if the applicant proposes to dredge or fill in the wetlands used for stormwater treatment, the Department in its review of the permit application shall evaluate the adverse effects of the dredging or filling on the treatment capability of the wetland.

(6) A showing by the applicant that the wetlands stormwater discharge facility design complies with the performance standards listed below shall create a presumption in favor of the issuance of the permit:

(a) the facility complies with the requirements of Section 17-25.060(2), F.A.C.

(b) the facility is part of a comprehensive stormwater management system that utilizes wetlands in combination with other best management practices to provide treatment of the runoff from the first one inch of rainfall; or, as an option for projects or project subunits with drainage areas less than 100 acres, the first one-half inch of runoff. Those facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment as specified in Section 17-25.025(9), F.A.C.

(c) the utilization of wetlands for stormwater treatment shall not adversely affect the wetland by disrupting the normal range of water level fluctuation of the wetland as it existed prior to construction of the wetlands stormwater discharge facility. Normal range of water level fluctuation will be defined as the maintenance of the fluctuating water surface changes between the normal low water and the normal high water of the wetland system so as to prevent the desiccation or over impoundment of the wetland. The Department shall use water level data, lines on the trees, adventitious roots or other hydrological and biological indicators to determine the normal low and normal high water levels. Upland detention may be necessary to attenuate peak flows and meet the water level fluctuations specified above. When the normal range of water level fluctuations has been artificially altered, the Department shall establish an acceptable range of water level fluctuation based on

historical information as to the previous size and nature of the wetlands, if available. If such information is not available, the range of water level fluctuation shall be derived from sound scientific principles or from analysis of other natural wetland systems in the vicinity.

(d) the wetlands stormwater discharge facility must be able to contain the runoff as specified in Section 17-25.042(6)(b), F.A.C. within the wetlands. Where the wetlands stormwater discharge facility alone cannot contain the runoff volume specified in (b) above within the water level ranges specified in (c) above, the other best management practices of the stormwater management system shall not adversely affect the ability of the wetlands stormwater discharge facility from meeting the requirements of this section. The design features of the facility shall maximize residence time of the stormwater within the wetland. The outfall structure shall be designed to bleeddown the volume specified in Section 17-25.042(6)(b) in no less than 120 hours with no more than one-half of the volume to be discharged within the first 60 hours.

(e) stormwater shall be discharged into the wetlands utilized so as to minimize the channelized flow of stormwater by employing methods including, but not limited to, sprinklers, overland flow or spreader swales.

(f) facilities which receive stormwater from areas which are a potential source of oil and grease contamination in concentrations exceeding applicable water quality standards shall include a baffle, skimmer, grease trap or other mechanism to minimize the amounts of oils and greases entering the wetlands utilized for stormwater treatment.

(g) erosion and sediment controls shall be used during construction and operation of the facility to minimize sedimentation of the wetlands utilized for stormwater treatment. The sediment control mechanism shall be built in the uplands and be of sufficient size and design to minimize resuspension and discharge of collected sediments into the wetland and to allow for recurring maintenance removal of sediments without adverse impact to the wetland.

(7) The operation phase of this permit shall not become effective until:

(a) an engineer certifies that the wetlands stormwater discharge facility has been constructed in accordance with the design approved by the Department. Within 30 days after completion of construction of the wetlands stormwater discharge facility, the permittee shall submit the certification and two copies of as-built drawings and notify the Department that the facility is ready for inspection. The certification prepared by an engineer (not necessarily the project design engineer but one who has been retained or employed by the permittee to provide professional engineering services during the construction phase of project completion) shall be made on forms provided by the Department. The engineer shall certify therein that the facility has been constructed substantially in accordance with approved plans and specifications, and that any deviations will not prevent the facility from functioning in compliance with the requirements of this chapter. The engineer shall note and explain substantial deviations from the approved plans and specifications. The certification shall be based upon on-site observation of construction (scheduled and conducted by the engineer or by a project representative under his direct supervision) for the purpose of determining if the

work was completed in compliance with approved plans and specifications;

(b) the permittee submits to the Department documentation that adequate provisions have been made for the operation and maintenance of the facility and for meeting any special permit conditions, such conditions may include water quality monitoring.

(8) In order to establish a reliable, scientifically valid data base upon which to evaluate the performance standards and the performance of the wetlands stormwater discharge facility, a monitoring program may be required. Monitoring programs shall provide the Department with comparable data for different types of wetlands and drainage designs. Data to be collected may include, but not be limited to, sedimentation rate, sediment trace metal concentrations, sediment nitrogen and phosphorus concentrations, changes in the frequency, abundance and distribution of vegetation and inflow and outflow water quality for nutrients, turbidity, oils and greases, bacteria and other parameters related to the specific site conditions. Inflow and outflow water quality parameters will be monitored on such storm event occurrences as established by the Department based on a site specific basis. Analytical data must be provided using standard procedures prescribed by a Department approved Quality Assurance Plan and reported in a format provided by the Department. The Department shall eliminate the requirement to continue the monitoring program upon its determination that no further data is necessary to evaluate the performance standards or ensure compliance with the performance standards and applicable water quality standards.

(9) A permit issued pursuant to this section shall be valid for a period of up to five years from the date of issue unless an earlier renewal date is specified by the Department. Both construction and operation of the facility will be covered by the initial permit.

(10) If the facility will continue to operate after the expiration date of the initial permit, the permit must be renewed. A permit may be renewed upon submittal to the Department of a certification that the facility is operating in compliance with the performance criteria of this section and is not causing water quality violations of downstream waters. The certification shall be treated as an application for permit renewal for purposes of the time provisions specified in Section 120.60, F.S.

(11) The permit may be transferred only pursuant to Florida Administrative Code Rule 17-4.120. Upon transfer, all original permit conditions, schedules and criteria continue to be applicable.

Specific Authority: 403.061, 403.912, 403.918, F.S.
Law Implemented: 403.087, 403.088, 403.918, 403.919, 403.921, 403.924, 403.927, 403.929, F.S.
History: New 5-8-85.

17-25.050 Delegation.

(1) The Department may, after notice in the Florida Administrative Weekly pursuant to the provisions of Chapter 120, Florida Statutes, delegate to either local governments or water management districts seeking such delegation, as provided in Sections 403.182, 403.812, Florida Statutes, and this section, the authority to process notices, issue or deny permits, initiate

work was completed in compliance with approved plans and specifications;

(b) the permittee submits to the Department documentation that adequate provisions have been made for the operation and maintenance of the facility and for meeting any special permit conditions, such conditions may include water quality monitoring.

(8) In order to establish a reliable, scientifically valid data base upon which to evaluate the performance standards and the performance of the wetlands stormwater discharge facility, a monitoring program may be required. Monitoring programs shall provide the Department with comparable data for different types of wetlands and drainage designs. Data to be collected may include, but not be limited to, sedimentation rate, sediment trace metal concentrations, sediment nitrogen and phosphorus concentrations, changes in the frequency, abundance and distribution of vegetation and inflow and outflow water quality for nutrients, turbidity, oils and greases, bacteria and other parameters related to the specific site conditions. Inflow and outflow water quality parameters will be monitored on such storm event occurrences as established by the Department based on a site specific basis. Analytical data must be provided using standard procedures prescribed by a Department approved Quality Assurance Plan and reported in a format provided by the Department. The Department shall eliminate the requirement to continue the monitoring program upon its determination that no further data is necessary to evaluate the performance standards or ensure compliance with the performance standards and applicable water quality standards.

(9) A permit issued pursuant to this section shall be valid for a period of up to five years from the date of issue unless an earlier renewal date is specified by the Department. Both construction and operation of the facility will be covered by the initial permit.

(10) If the facility will continue to operate after the expiration date of the initial permit, the permit must be renewed. A permit may be renewed upon submittal to the Department of a certification that the facility is operating in compliance with the performance criteria of this section and is not causing water quality violations of downstream waters. The certification shall be treated as an application for permit renewal for purposes of the time provisions specified in Section 120.60, F.S.

(11) The permit may be transferred only pursuant to Florida Administrative Code Rule 17-4.120. Upon transfer, all original permit conditions, schedules and criteria continue to be applicable.

Specific Authority: 403.061, 403.912, 403.918, F.S.
Law Implemented: 403.087, 403.088, 403.918, 403.919, 403.921, 403.924, 403.927, 403.929, F.S.
History: New 5-8-85.

17-25.050 Delegation.

(1) The Department may, after notice in the Florida Administrative Weekly pursuant to the provisions of Chapter 120, Florida Statutes, delegate to either local governments or water management districts seeking such delegation, as provided in Sections 403.182, 403.812, Florida Statutes, and this section, the authority to process notices, issue or deny permits, initiate

enforcement actions, and monitor for compliance as provided in Sections 403.182, 403.812, Florida Statutes, and this section. Delegation shall not include the authority for a local government or a water management district to issue or deny permits for its own activities except replacement items or maintenance of existing facilities.

(2) A water management district which has been delegated stormwater regulation pursuant to this section may establish alternative requirements which protect the designated uses of waters of the state provided that the alternative requirements are approved by the Environmental Regulation Commission pursuant to Section 403.804, Florida Statutes and have been incorporated by reference as department stormwater rules in 17-25.090, F.A.C. These alternative requirements incorporated as department rules shall apply in lieu of the provisions of this Chapter in the area of delegation, and applicable surface water management and stormwater permit discharge standards shall be applied in one permit proceeding. Following delegation to a water management district, those activities within the district that meet the exemption criteria of Section 17-25.030(1) shall be exempt from the requirements of Section 17-4.242 regarding Outstanding Florida Waters.

(3) A local government which has been delegated stormwater regulation pursuant to this section may also establish by rule, ordinance or local law, alternative requirements provided the Department determines such alternative requirements are compatible with, or more stringent than, those imposed by this chapter.

Specific Authority: 403.061, 403.062, 403.182, 403.805, 403.812, F.S.
Law Implemented: 403.021, 403.061, 403.062, 403.182, 403.805, 403.812, F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84, 5-8-85. Previously numbered as 17-25.05.

17-25.060 Relationship to Other Permitting Requirements.

(1) Whenever the construction of a new stormwater discharge facility requires that a dredge or fill permit be secured pursuant to Sections 17-4.280 or 17-4.290 or Chapter 17-12, Florida Administrative Code, or whenever other rules of the Department require that a permit, section 401 federal Clean Water Act certification or other certification be secured, all applicable stormwater requirements under this chapter shall be reviewed as part of those permit applications. A separate permit application under this chapter shall not be required. If the applicant requests a separate stormwater permit, the applicant must notify the Department of any other Department permits, exemptions, or certifications which have or will be requested for the project.

(2) The permit requirements of Chapter 17-4 or other applicable rules, rather than those of this chapter, shall apply to discharges which are a combination of stormwater and industrial or domestic wastewater or which are otherwise contaminated by non-stormwater sources unless:

(a) the stormwater discharge facility is capable of providing treatment of the non-stormwater component sufficient to meet state water quality standards; and

(b) the applicant requests that the permit requirements of this Chapter apply.
Specific Authority: 403.061, 403.062, 403.087, F.S.
Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.101, 403.702, 403.708, F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84, 5-8-85. Previously numbered as 17-25.06.

17-25.07 Transferability of Other Chapters.
Specific Authority: 403.061, 403.062, 403.087, 403.504, F.S.
Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.101, 403.502, 403.702, 403.708, F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Repealed 5-1-82.

17-25.080 General Provisions.
Nothing under this chapter shall preclude:
(1) stormwater effects from being considered in the evaluation of other types of permits where such consideration is relevant to a determination of compliance with applicable Department requirements.
(2) the legal joinder in a permitting proceeding under this chapter of persons who own or control unpermitted stormwater discharge systems which comprise a significant portion of the stormwater discharge facility.
(3) the Department from taking appropriate legal action including but not limited to the requiring of a permit to prevent the impairment of a use for which a water of the state has been designated under Chapter 17-3, Florida Administrative Code.
(4) the Department from entering interagency or interlocal agreements to accomplish the provisions of this chapter.
Specific Authority: 403.061, 403.062, 403.087, F.S.
Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.121, 403.141, 403.161, 403.708, F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82. Previously numbered as 17-25.08.

17-25.090 List of Entities to Which Permitting Pursuant to this Chapter has been Delegated; Addresses; Delegation Documents and Rules Adopted by Reference.
(1) South Florida Water Management District; Post Office Box V; West Palm Beach, Florida 33402
(a) Surface Water Management Rule; Chapter 40E-4, Florida Administrative Code (March 9, 1983);
(b) General Surface Water Management Rule; Chapter 40E-40, Florida Administrative Code (December 1, 1982);
(c) "Basis of Review for Surface Water Management Permit Applications within the South Florida Water Management District - May 1986."

(d) Nothing in this delegation shall prevent the Department from considering the stormwater impact of dredging or filling regulated pursuant to 17-4.280 or 17-4.290 or Chapter 17-12, Florida Administrative Code, or the District from implementing applicable provisions of Chapters 17-3 and 17-4, Florida Administrative Code. Provided, however, in those cases where the water management district has issued a surface water management permit pursuant to Chapter 373, Part IV, and this delegation, the Department shall confine its review of stormwater quality impacts solely to those generated by dredging and filling regulated pursuant to Rules 17-4.280 and 17-4.290, Florida Administrative Code.

(2) Southwest Florida Water Management District; 2379 Broad Street, Brooksville, Florida 33512.

(a) Regulation of Stormwater Discharge; Chapter 17-25, Florida Administrative Code, except for Section 17-25.042.

(b) When a proposed stormwater discharge facility is associated with activities which require a dredge and fill, industrial waste, or hazardous waste permit from the Department, stormwater permit applications and exemption notices must be submitted to the Department and the Department shall regulate such stormwater discharge facilities within the District.

(3) Suwannee River Water Management District; Route 3, Box 64, Live Oak, Florida 32060.

(a) Surface Water Management and Works of the District Rule; Chapter 40B-4, Florida Administrative Code (August 15, 1985).

(b) The permitting of wetlands stormwater discharge facilities pursuant to Section 17-25.042 is not delegated to the District.

(4) St. Johns River Water Management District, Post Office Box 1429, Palatka, Florida 32078.

(a) Regulation of Stormwater Discharge, Chapter 40C-42, Florida Administrative Code (February 1986).

(b) The permitting of wetlands stormwater discharge facilities pursuant to Section 17-25.042 is not delegated to the District.

Specific Authority: 403.061, 403.812, F.S.
Law Implemented: 403.021, 403.061, 403.812, F.S.
History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 3-28-84, 5-8-85, 5-14-86. Previously numbered as 17-25.09.

17-25.10 Effective Date.

Specific Authority: 120.54(12)(a), 403.061(7), F.S. Law Implemented: 120.54(12)(a), 403.051, F.S. History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Repealed 1-26-84.

APPENDIX B.

Florida Department of Environmental Regulation

Revisions to the Stormwater Rule
Chapter 17-25, F.A.C.

Draft Date: October 7, 1988

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

MEMORANDUM

TO: Stormwater Mailing List
Interested Parties

FROM: Eric Livingston, Administrator
Stormwater/Nonpoint Source Management Section

DATE: October 7, 1988

SUBJECT: Revisions to the Stormwater Rule, Chapter 17-25, F.A.C.

As many of you know, for some time the Department has been advising the regulated public to not use detention with filtration systems because of inherent problems associated with their design, construction and operation which greatly reduce the water quality benefits of filtration systems. Accordingly, the Stormwater Rule is being revised to eliminate the general permit for filtration systems and to create a new general permit for wet detention systems. The wet detention design and performance standards listed in Section 17-25.025(5) are those which have been required by the Department to obtain construction permits for wet detention systems since 1978.

The proposed revisions are summarized below:

17-25 Draft Revisions

1. Eliminating definitions associated with stormwater filters Section 17-25.020(7), (8) and (17).

2. Providing a new definition for underdrain systems Section 17-25.020(15).

3. Deleting existing language in Section 17-025 Design and Performance Standard following the introductory paragraph. Reorganizing the existing language in this section which may pertain to any class of treatment system [Existing 17-25.025(6) through (9)] and listing these standards under a new heading "(1) General Criteria: All New Stormwater Management Systems". [New 17-25.025(1) through 17-25.025(1)(d)].

4. Moving existing language regarding standards for retention ponds and swales [Existing 17-25.025(4) and (5)], new Section 17-25.025(2) and (3).

5. Providing for additional design criteria and standards associated with underdrained stormwater basins in Section 17-25.025(4). Standards for these systems were previously a subset of the criteria associated with filters.

6. Providing new design criteria and standards for a new class of treatment system (wet detention) for which a general permit is proposed [New Section 17-25.025(5)].

7. Revising Section 17-25.03(1)(b) language associated with the 10 acre/2 acre impervious area exemption to conform with recent statutory changes.

8. Eliminating existing 17-25.030(2) language associated with "notice exemptions" within the boundaries of the Southwest Florida Water Management District. This section is no longer needed since SWFWMD how has adopted provisions for stormwater general permits for these activities.

9. Renumbering Section 17-25.030 to reflect the above deletions.

10. Deleting existing introductory language from Section 17-25.035 Stormwater General Permits. Replace with existing nearly duplicate language from Section 17-25.801. Also moving additional language regarding General Permits for Stormwater Discharge Facilities [Existing Section 17-25.801] to Section 17-25.035(2).

11. Deleting stormwater filters from those facilities eligible for a stormwater general permit [Section 17-25.035(1)(b)] with the exception of completely underdrained stormwater retention areas.

12. Providing for a new category of general permit (wet detention pond) to replace filter systems [Section 17-25.035(1)(c)].

13. Renumbering Section 17-25.035 to reflect additions and deletions.

14. Deleting existing language associated with equivalent treatment under Section 17-25.040 to reflect the loss of the presumption of filtration as providing treatment equal to other practices. Adding language to reflect that treatment equivalent to specified levels of wet detention will also be acceptable to establish a presumption in favor of issuing a permit. [Ref. 17-25.040(5) and (6)].

15. Deleting existing references to Chapter 17-25 associated with delegation to tne Southwest Florida Water Management District, Section 17-25.090(2)(a). Revising language to reflect the delegation of wetland stormwater facilities to SWFWMD.

16. Deleting existing Section 17-25.801 since these provisions are included in new Section 17-25.035.

A public workshop to discuss the proposed revisions will be held in Room 609 of the Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee on October 18 commencing at 10 am. The complete rule revisions schedule is listed below:

17-25 Rule Revision Schedule

October 7	Mail revisions to Stormwater Mailing List Publish FAW notice for Workshop #1
October 18	Workshop #1 in Tallahassee
November 4	Publish FAW Notice for Workshop #2
November 16	Workshop #2 in Tallahassee (if necessary)
December 7/8	ERC Adoption in Tallahassee

10-18-88 WORKSHOP DRAFT

CHAPTER 17-25

REGULATION OF STORMWATER DISCHARGE

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17-25.001 Scope.

(1) The discharge of untreated stormwater may reasonably be expected to be a source of pollution of waters of the state and is, therefore, subject to Department regulation. The Department shall prevent pollution of waters of the state by discharges of stormwater, to ensure that the designated most beneficial uses of waters, as prescribed by Chapter 17-3, Florida Administrative Code, are protected.

(2) A permit under this chapter will be required only for new stormwater discharge facilities as defined herein. This provision shall not affect the Department's authority to require appropriate corrective action, pursuant to Sections 403.121 - 403.161, Florida Statutes, whenever existing facilities cause or contribute to violations of state water quality standards.

(3) Stormwater discharges to groundwaters shall be regulated under the provisions of Section 17-28.700, F.A.C. and other applicable rules of the Department.

(4) The Department intends that, to the greatest extent practicable, the provisions of this chapter be delegated to either local governments or water management districts seeking such delegation.

Specific Authority: 403.061, F.S.

Law Implemented: 403.021, 403.061, 403.101(1), F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84. Previously numbered as 17-25.01.

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17-25.020 Definitions.

(1) "Artificial Watercourse" means a man-made waterway that was totally dredged or excavated prior to October 1, 1984 and which connects formerly isolated, nonjurisdictional wetlands to other waters. The Department shall bear the burden to show that such artificial watercourse was not totally dredged or excavated or that the connected wetlands were formerly jurisdictional.

(2) "Completion of Construction" means the time at which the stormwater discharge facility is first placed into operation or when the project passes final building inspection or when the project receives a certificate of occupancy, whichever comes first.

(3) "Conservation Plan" means a formal document, prepared or approved by a local Soil and Water Conservation District Board organized pursuant to Chapter 582, Florida Statutes, which outlines a system of management practices to control soil erosion, reduce sediment loss or protect the water quality on a specific parcel of property.

(4) "Construction" means any on-site activity which will result in the creation of a new stormwater discharge facility, including the building, assembling, expansion, modification or alteration of the existing contours of the property, the erection of buildings or other structures, or any part thereof, or land clearing.

(5) "Detention" or "To Detain" means the collection and temporary storage of stormwater in such a manner as to provide for treatment through

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physical, chemical, or biological processes with subsequent gradual release of the stormwater.

(6) "Engineer" means a Professional Engineer registered in Florida, or other person exempted pursuant to the provisions of Chapter 471, Florida Statutes, who is competent in the fields of hydrology and stormwater pollution control.

~~(7) "Effective Grain Size" means the diameter of filter sand or other aggregate that corresponds to the 10 percentile finer by dry weight on the grain size distribution curve.~~

~~(8) "Filtration or "To Filter" means the selective removal of suspended matter from stormwater by passing the water through at least 2 feet of suitable fine textured granular media such as porous soil, uniformly graded sand and gravel, or other natural or artificial aggregate, which may be used in conjunction with filter fabric and/or underdrain pipe.~~

(7) ~~(9)~~ "Intermittent Watercourse" means a stream or waterway that flows only at certain times of the year, flows in direct response to rainfall, and is normally an influent stream except when the groundwater table rises above the normal wet season level.

(8) ~~(10)~~ "New Stormwater Discharge Facility" means a stormwater discharge facility which was not in existence on February 1, 1982, or for which a completed stormwater discharge, dredge or fill, or other Department permit or license application had not been received before February 1, 1982, or an existing stormwater discharge facility which is modified, as specified

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in Section 17-25.040(3), Florida Administrative Code, on or after February 1, 1982. A stormwater discharge facility approved or found to be exempt by the Department before February 1, 1982, or a facility which had been determined by the Department not to be significant pursuant to 17-4.248(5) before February 1, 1982, ~~or a facility exempted pursuant to Section 17-25.030(2)~~ shall not be considered a new stormwater discharge facility unless modified pursuant to Section 17-25.040(3).

(9) ~~(11)~~ "Regional Stormwater Discharge Facility" means a stormwater discharge facility which is permitted pursuant to Section 17-25.040(6) and is designed and constructed to accept stormwater from multiple parcels within the drainage area served by the regional facility. Drainage area refers to the land or development that is served by and/or contributes stormwater to the regional facility.

(10) ~~(12)~~ "Retention" or "To Retain" means the prevention of, or to prevent the discharge of, a given volume of stormwater runoff into surface waters of the state by complete on-site storage.

(11) ~~(13)~~ "Stormwater" means the flow of water which results from, and which occurs immediately following, a rainfall event.

(12) ~~(14)~~ "Stormwater Discharge Facility" means a stormwater management system which discharges stormwater into surface waters of the State.

(13) ~~(15)~~ "Stormwater Management System" means the designed features of the property which collect, convey, channel, hold, inhibit or divert the movement of stormwater.

(14) ~~(16)~~ "Swale" means a manmade trench which:

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(a) has a top width-to-depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1 foot vertical; and,

(b) contains contiguous areas of standing or flowing water only following a rainfall event; and,

(c) is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and,

(d) is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge.

(15) "Underdrain" means a drainage system installed beneath a stormwater holding area to improve the infiltration and percolation characteristics of the natural soil when permeability is restricted due to periodic high water table conditions or the presence of layers of fine textured soil below the bottom of the facility. These facilities usually consist of a system of interconnected below-ground conduits such as perforated pipe, which simultaneously limit the water table elevation and intercept, collect, and convey stormwater which has percolated through the soil.

~~(17) "Uniformity Coefficient" means the number representing the degree of homogeneity in the distribution of particle sizes of filter sand or other granular material. The coefficient is calculated by determining the D60/D10 ratio where D10 and D60 refer to the particle diameter corresponding to the 10 and 60 percentile of the material which is finer by dry weight.~~

(16)~~(18)~~ "Waters" are as defined in Section 403.031(12), Florida

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Statutes.

(17) ~~(19)~~ "Wetlands" means, for the purposes of this rule, those waters which are dominated by those plant species listed in Section 17-3.021(15) or Section 17-3.022, F.A.C. and which meet the conditions specified in Section 17-25.042(2), F.A.C.

(18) ~~(20)~~ "Wetlands Stormwater Discharge Facility" means a new stormwater discharge facility which incorporates those wetlands identified in Section 17-25.042(2), F.A.C. into the stormwater management system to provide stormwater treatment.

Specific Authority: 403.061, F.S.

Law Implemented: 403.021, 403.031, 403.061, 403.913, F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 5-8-85, _____. Previously numbered as 17-25.02.

17-25.025 Design and Performance Standards.

The following design and performance standards are established for the purpose of determining compliance with this chapter, however, in some instances they may not result in compliance with water quality standards set forth in Chapters 17-3 and 17-4, F.A.C. No discharge from a stormwater discharge facility shall cause or contribute to a violation of water quality standards in waters of the state. Unless the applicant provides reasonable assurance that the discharge will not cause or contribute to a violation of water quality standards in waters of the state, the Department may require

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more stringent design and performance standards than are otherwise required by this chapter:

(1) General Criteria: All New Stormwater Management Systems.

(a) Erosion and sediment control best management practices shall be used as necessary during construction to retain sediment on-site. These management practices shall be designed by an engineer or other competent professional experienced in the fields of soil conservation or sediment control according to specific site conditions and shall be shown or noted on the plans of the stormwater management system. The engineer or designer shall furnish the contractor with information pertaining to the construction, operation and maintenance of the erosion and sediment control practices.

(b) Stormwater discharge facilities which receive stormwater from areas which are a potential source of oil and grease contamination in concentrations that exceed applicable water quality standards shall include a baffle, skimmer, grease trap or other mechanism suitable for preventing oil and grease from leaving the stormwater discharge facility in concentrations that would cause or contribute to violations of applicable water quality standards in the receiving waters.

(c) Stormwater discharge facilities which discharge directly to Outstanding Florida Waters shall add a level of treatment equal to fifty percent of the treatment criteria specified in Section 17-25.035(1)(b)(c) or Section 17-25.040 or Section 17-25.042, F.A.C.

(d) Unless applicable local regulations are more restrictive, for purposes of public safety, permanently wet retention and detention basins shall be

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fenced or otherwise restricted from public access, or shall contain side slopes that are no steeper than 4:1 (horizontal:vertical) out to a depth of two feet below the control elevation. All side slopes shall be stabilized by either vegetation or other materials to minimize erosion and sedimentation of the basins.

(2) Retention basins shall again provide the capacity for the treatment volume of stormwater within 72 hours after the storm. The additional storage volume must be provided by a decrease of stored water caused only by percolation through soil, evaporation or evapotranspiration.

(3) Swales shall be designed to percolate 80% of the runoff from a three-year one-hour design storm within 72 hours after the storm, assuming average antecedent conditions.

(4) Underdrain stormwater basins shall again provide the capacity for the specified treatment volume of stormwater within 72 hours following a storm. Underdrain systems shall be covered with at least two feet of indigenous soil. Such systems shall be designed with a safety factor of at least two unless the engineer affirmatively demonstrates based on plans, test results, calculations or other information that a lower safety factor is appropriate for the specific site conditions. Examples of how to apply this factor include but are not limited to reducing the design percolation rate by half or designing for the required drawdown within 36 hours. The additional storage volume must be provided by a decrease of stored water caused only by percolation through soil, evaporation or evapotranspiration. These systems shall:

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(a) contain contiguous areas of standing water only following a rainfall; and,

(b) be planted or otherwise established with permanent vegetative cover suitable for soil stabilization, stormwater treatment, and nutrient uptake; and,

(c) include a capped and sealed inspection or cleanout port at the terminus of each drainage lateral, extending to the surface of the ground; and,

(d) include provisions for mowing and removal of grass clippings and yearly aeration as a part of the regular maintenance plan.

(e) filter fabric or other means must be used to prevent the soil from moving and being washed out through the underdrain pipe.

(f) shall contain a free flowing discharge that is not affected by backwater conditions from a 10 yr-24 hr design storm.

(5) Wet detention stormwater discharge facilities shall comply with the following design standards:

(a) The facility shall contain the runoff as specified in Section 17-25.035(1)(c) F.A.C. The outfall structure shall bleed down the volume specified in Section 17-25.035(1)(c) F.A.C. in no less than 120 hours with no more than one-half of the volume to be discharged within the first 60 hours.

(b) A permanent pool of water shall be provided such that the volume between the control or bleed down elevation and the pond bottom results in a residence time of at least 14 days. This volume may be determined by: 1. estimating 3.83% of annual average runoff, or 2. taking two inches times

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the impervious acreage in the project plus one-half inch times the pervious acres. The value in cubic feet is determined through multiplication times the appropriate conversion factor (i.e., 3630).

(c) A littoral zone shall be included to provide biological assimilation of pollutants.

1. At least 35 percent of the detention system surface area shall consist of a littoral zone that is available for biological assimilation of pollutants. The percentage of littoral zone is based on the ratio of vegetated littoral zone to the surface area of the pond at the control elevation.

2. The littoral zone and vegetation shall be concentrated at the outfall, unless multiple littoral areas are used.

3. The treatment volume should not cause the pond level to rise more than 18 inches above the control elevation.

4. The littoral zone shall be gently sloped (6:1 or flatter) out to a point 2 feet below the bleed down or control elevation.

5. The littoral zone shall contain at least 4 inches of suitable soil, preferably wetland topsoil containing a seed source of desirable native aquatic plants.

6. Mulching or planting of the littoral zone is required. At least one-third of the littoral zone shall be planted. Eighty-five percent coverage of the littoral zone by suitable aquatic plants is required within the first year of operation. Replanting shall be required if coverage falls below the 85 percent level. Native vegetation must be maintained in the littoral zone

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as part of the system's operation and maintenance. Undesirable species such as cattail and exotic plants shall be limited to 10 percent or less of the total cover and shall be removed when they exceed this.

(d) A maximum depth of 8-10 feet below the invert of the bleed down device shall be planned for the permanent pool unless the applicant affirmatively demonstrates that the deeper depths will not cause anaerobic conditions in the bottom sediments and water. Excavation shall not breach an aquitard such that it allows lesser quality water to pass, either way between the two systems. Where an aquitard is not present, the pond shall not be excavated to within two feet of the underlying limestone which is part of a drinking water aquifer.

(e) Dimensional criteria (as measured at or from the control elevation):

1. Area - 0.5 acre minimum.

2. Width - 100 feet minimum for linear areas in excess of 200 feet length. Irregular shaped areas may have narrower reaches but should average at least 100 feet.

3. Length to width ratio - 2:1 minimum.

4. Side slopes shall be no steeper than 4:1 out to a depth of 2 feet below the control elevation.

(f) Inlet structures shall be designed to dissipate the energy of water entering the pond. Baffles are the most commonly used structures for such purposes. Inlets shall not be located near the outlet so as to prevent short circuiting and provide the longest possible flow path.

(g) Facilities that are potential sources for oil and grease contamination

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must include a skimmer or other mechanism to prevent these substances from leaving the facility.

(h) Erosion and sediment control practices must be used to retain sediment on site during construction. Sediment accumulations in the pond from construction activities shall be removed to prevent loss of storage volume.

(i) A notice shall be posted warning residents of potential water borne disease that may be associated with body contact with water in these facilities.

(j) Perimeter maintenance and operation easements of twenty feet minimum width and slopes of 4:1 (horizontal:vertical) or flatter shall be provided beyond the control elevation water line.

(k) Bleed down devices incorporating dimensions smaller than three inches minimum width or less than 20 degrees for "v" notches shall include a device to eliminate clogging. Such devices include baffles, grates, pipe elbows, etc.

~~(1) Detention basins shall again provide the capacity for the specified treatment volume of stormwater within 72 hours following a storm event.~~

~~(2) Filtration systems shall have pore spaces large enough to provide sufficient flow capacity so that the permeability of the filter is equal to or greater than the surrounding soil. The design shall ensure that the particles within the filter do not move. When sand or other fine textured aggregate other than natural soil are used for filtration, the filter material should be of a quality sufficient to satisfy the following requirements:~~

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~~(a) Washed tless than 1 percent silt, clay and organic matter) unless fitter cloth is used which is suitable to retain the silt, clay and organic matter within the fitter;~~

~~(b) Uniformity coefficient 1.5 or greater; and~~

~~(c) Effective grain size of 0.20 to 0.55 millimeters in diameter.~~

~~These criteria are not intended to preclude the use of multilayered fitters nor the use of materials to increase ion exchange, precipitation or pollutant adsorption capacity of the fitter.~~

~~(3) Filtration systems shall be designed with a safety factor of at least two unless the engineer affirmatively demonstrates based on plans, test results, calculations or other information that a lower safety factor is appropriate for the specific site conditions. Examples of how to apply this factor include but are not limited to reducing the design percolation rate by half, doubling the length of underdrain or designing for the required drawdown within 36 hours.~~

~~(4) Retention basins shall again provide the capacity for the given volume of stormwater within 72 hours following the storm event. The additional storage volume must be provided by a decrease of stored water caused only by percolation through soil, evaporation or evapotranspiration.~~

~~(5) Swales shall be designed to percolate 60% of the runoff from a three year, one hour design storm within 72 hours after a storm event, assuming average antecedent conditions.~~

~~(6) Unless applicable local regulations are more restrictive, for purposes of public safety, permanently wet retention and detention basins~~

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~~shall either be fenced or otherwise restricted from public access or contain side slopes that are no steeper than 4:1 (horizontal:vertical) out to a depth of two feet below the control elevation. All side slopes shall be stabilized by either vegetation or other materials to minimize erosion and subsequent sedimentation of the basins.~~

~~(7) Erosion and sediment control best management practices shall be used as necessary during construction to retain sediment on site. These management practices shall be designed by an engineer or other competent professional experienced in the fields of soil conservation or sediment control according to specific site conditions and shall be shown or noted on the plans of the stormwater management system. The engineer or designer shall furnish the contractor with information pertaining to the construction, operation and maintenance of the erosion and sediment control practices.~~

~~(8) Stormwater discharge facilities which receive stormwater from areas which are a potential source of oil and grease contamination in concentrations exceeding applicable water quality standards shall include a baffle, skimmer, grease trap or other mechanism suitable for preventing oil and grease from leaving the stormwater discharge facility in concentrations that would cause or contribute to violations of applicable water quality standards in the receiving waters.~~

~~(9) Stormwater discharge facilities which directly discharge to Outstanding Florida Waters shall include an additional level of treatment equal to fifty percent of the treatment criteria specified in Section~~

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~~17-25.035(1)(b) or Section 17-25.040 or Section 17-25.042, F.A.C.~~

Specific Authority: 403.061, 403.912, F.S.

Law Implemented: 403.021, 403.061, 403.101(1), F.S.

History: New 1-26-84, Amended 3-28-84, 5-8-85, _____.

17-25.027 Legal Operation/Maintenance Entity Requirements.

(1) ~~The Department considers~~ The following entities may operate and maintain ~~to be acceptable for meeting the requirements necessary to ensure~~ that a stormwater discharge facility ~~will be operated and maintained~~ in compliance with the requirements of this chapter and other Department rules regulations:

(a) local governmental units, including counties or municipalities, or Municipal Service Taxing Units.

(b) active water control districts pursuant to Chapter 298, Florida Statutes, or drainage districts created by special act, or Community Development Districts pursuant to Chapter 190 Florida Statutes, or Special Assessment Districts pursuant to Chapter 170 Florida Statutes.

(c) state or federal agencies.

(d) duly constituted stormwater, communication, water, sewer, electrical or other public utilities.

(e)~~(f)~~ profit or non-profit corporations including homeowners associations, property owners associations, condominium owners associations or master associations shall be acceptable only under certain conditions that ensure that the corporation has the financial, legal and administrative

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capability to provide for the long term operation and maintenance of the stormwater discharge facility.

(2)~~(e)~~ The property owner or developer normally is not acceptable as a responsible entity when the property is intended to be sold to third parties. However, the property owner or developer may be acceptable under one of the following circumstances:

1. Written proof in the appropriate form by either letter or resolution, that a governmental entity or such other acceptable entity as set forth in paragraphs (a)-(c) above, will accept the operation and maintenance of the stormwater management and discharge facility at a time certain in the future.

2. Bonding or other assurances sufficient to operate and perform anticipated maintenance on stormwater facilities.

(3)~~(2)~~ Entity Requirements.

(a) if a Homeowner, Property Owner, Condominium or Master Association is proposed, the owner or developer must submit the Articles of Incorporation, Declaration, Restrictive Covenants, Deed Restrictions or such other organizational or operational documents affirmatively taking responsibility for the operation or maintenance of the stormwater discharge facility.

(b) the Association shall have sufficient powers reflected in its organizational or operational documents to:

1. operate and maintain the stormwater management system and the stormwater discharge facility as exempted or permitted by the Department.

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2. establish rules and ~~regulations~~.

3. assess members.

4. contract for services (if the Association contemplates employing a maintenance company) to provide the services for operation and maintenance.

5. the Association shall exist in perpetuity; however, if the Association is dissolved, the Articles of Incorporation must provide that the stormwater management system and discharge facility shall be operated and maintained ~~maintenanced~~ by an entity as set forth in paragraph (1) of this rule.

(4) ~~(3)~~ Phased Projects.

(a) if an Operation/Maintenance entity is proposed for a project which will be constructed in phases, and subsequent phases will use ~~utilize~~ the same stormwater management facilities as the initial phase or phases, the entity shall have the ability to accept responsibility for the operation/maintenance of stormwater discharge facility for future phases of the project.

(b) if the development scheme contemplates independent operation/maintenance entities for different phases, and the stormwater management system is integrated throughout the project, the entities, either separately or collectively shall have the responsibility and authority to operate and maintain the stormwater management system and discharge facility for the entire project. That authority shall include cross easements for stormwater management and the ability to enter and maintain the various facilities, should any sub-entity fail to maintain a portion of the

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stormwater management system or discharge facility within the project.

(5) ~~(4)~~ The applicant shall be an acceptable entity from the time construction begins until the stormwater discharge facility is dedicated to and accepted by an established legal entity pursuant to (1) above. The applicant shall provide proof of the existence of an entity pursuant to (1) above or of the future acceptance of the facility by an entity described in (1) above prior to initiating construction.

(6) ~~(5)~~ The provisions of this section shall become effective on October 1, 1985.

Specific Authority: 403.061, 403.087, 403.088, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.182, F.S.

History: New 5-8-85, Amended _____.

17-25.030 Exemptions.

(1) The following types of new stormwater discharge facilities are exempt from the notice and permit requirements of this chapter:

(a) facilities designed to accommodate only one single family dwelling unit, duplex, triplex, or quadruplex, provided the single unit, duplex, triplex or quadruplex is not part of a larger common plan of development or sale;

(b) facilities which are designed to serve single family residential projects, including duplexes, triplexes and quadruplexes, ~~of~~ if they are less than 10 acres total land area and ~~which~~ have less than 2 acres impervious surface provided that the facilities:

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1. comply with all regulations or ordinances applicable to stormwater management and adopted by a city or county; and

2. are not part of a larger common plan of development or sale; and

3. discharge into a stormwater discharge facility exempted or permitted by the Department under this chapter which has sufficient capacity and treatment capability as specified in this chapter and is owned, maintained, or operated by a city, county, special district with drainage responsibility, or water management district; however, this exemption does not authorize discharge to a facility without the facility owner's prior written consent; ~~or~~.

~~4. discharge into a stormwater discharge facility which has sufficient capacity and is part of a master drainage plan adopted by a city or county; however, this exemption does not authorize discharge to a facility without the facility owner's prior written consent.~~

(c) stormwater discharge facilities whose functioning treatment components consist entirely of swales. However, this exemption is valid only if the swale, as constructed, meets or exceeds the requirements specified in Section 17-25.020(16) and Section 17-25.025(5).

(d) facilities which discharge into a regional stormwater discharge facility which is permitted pursuant to Section 17-25.040 where the appropriate treatment criteria specified in this chapter and applied to the permitted regional facility are met by the discharge; however, this exemption does not authorize discharge to the permitted regional facility without the facility owner's prior written consent.

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(e) facilities for agricultural lands, provided those facilities are part of an approved Conservation Plan; however, if the Conservation Plan is not implemented according to its terms, this exemption shall be void; and

(f) facilities for silvicultural lands, provided that the facilities are constructed and operated in accordance with the Silviculture Best Management Practices Manual (1979), published by the State of Florida, Department of Agriculture and Consumer Services, Division of Forestry, which is adopted and made a part of this rule by reference. A copy of this manual may be obtained by writing the Department of Agriculture, Division of Forestry, 3125 Conner Boulevard, Tallahassee, Florida, and may be inspected at all Department of Environmental Regulation offices.

~~(2) Within the geographical area for which the Department has delegated stormwater permitting to the Southwest Florida Water Management District, the following types of new stormwater discharge facilities are exempt from the permitting requirements of this chapter provided that the owner files notice and an engineer certifies to the District, on forms provided by the District, at least 30 days prior to construction that the discharge facility will meet the criteria specified below, and provided that an entity responsible for operation and maintenance of the proposed facility has been determined. Furthermore, an engineer shall certify on forms provided by the District, within 30 days after completion of construction that the new stormwater discharge facility, as constructed, qualifies for exemption under this section. The District may require that the owner and engineer furnish appropriate design analyses, calculations, drawings, specifications and~~

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~~other information to describe, verify and document that the proposed stormwater discharge facility qualifies for exception according to this section.~~

~~(a) Facilities which discharge into a stormwater discharge facility which is permitted pursuant to section 17-25.040 or exempt pursuant to section 17-25.030 where the appropriate treatment criteria specified in this chapter and applied to the permitted or exempt facility are not exceeded by the discharge; however, this exception does not authorize discharge to permitted or exempt facilities without the facility owners prior written consent; or,~~

~~(b) Facilities which provide retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for projects or project subunits with drainage areas less than 100 acres, facilities which provide retention, or detention with filtration, of the first one half inch of runoff. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment pursuant to Section 17-25.025(9); F.A.C.; or,~~

~~(c) Modification or reconstruction by a city, county, state agency, special district with drainage responsibility, or water management district of an existing stormwater management system which is not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designated uses of waters of the state.~~

~~(d) Facilities of stormwater management systems that include a~~

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~~combination-of-management-practices-including-but-not-limited-to-retention basins,-swales,-pervious-pavement,-landscape-or-natural-retention-storage that-will-provide-for-the-percolation-of-the-runoff-from-a-three-year one-hour-design-storm.~~

(2)~~(3)~~ Exemptions for Artificial Systems Used for Urban Stormwater Conveyance or Renovation.

(a) The Secretary shall, upon the petition of an affected person or permit applicant, and after public notice in the Florida Administrative Weekly and in a newspaper of general circulation in the area of the waters affected and after opportunity for public hearing pursuant to Chapter 120, Florida Statutes, issue an Order for the duration of the permit specifically exempting from Class III criteria artificially created waters of the state which are upstream of man-made, discharge control systems controlled by the affected person or permit applicant and which are primarily for the conveyance or the retention, detention, and treatment of urban stormwaters. Such Order shall only be issued after affirmative demonstration by the Petitioner of the following:

1. reasonable assurance has been provided that the discharge will not cause a violation of any applicable water quality standards downstream from the discharge control system; and,

2. waters shall not be degraded below the minimum standards prescribed for all waters at all times in Section 17-3.051, F.A.C.; and,

3. granting the exemption is clearly in the public interest; and,

4. compliance with presently specified criteria is unnecessary for the

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protection of public water supplies or human health.

(b) The Petitioner shall affirmatively demonstrate those standards which the Petitioner believes more appropriately apply to the waters for which the exemption is sought.

(c) The Secretary shall specify, by Order, only those criteria which the Secretary determines to have been demonstrated by the preponderance of competent substantial evidence to be more appropriate.

(d) The Department shall modify the Petitioner's permit consistent with the Secretary's Order.

Specific Authority: 403.061, 403.087, 403.088, 403.504, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.121, 403.141, 403.161, 403.182, 403.502, 403.702, 403.708, F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 3-28-84, 5-8-85, 8-30-88,_____. Formerly 17-25.03.

17-25.035 General Permit for Stormwater Discharge Facilities.

(1) A general permit is hereby granted to any person for the construction and operation of the following types of new stormwater discharge facilities as set forth in this section provided that notice to the Department pursuant to Rule 17-4.530 is submitted on Form 17-1.215(2) Revised April 1985. This general permit shall not expire and shall not be subject to Section 17-4.540(13) unless suspended or revoked in accordance with Section 17-4.530(5):

~~(1) Except in the geographical area for which the Department has~~

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~~delegated-stormwater-permitting-to-the-Southwest-Florida-Water-Management District,-the-following-types-of-new-stormwater-discharge-facilities-may-be constructed-pursuant-to-general-permit-as-specified-in-Section-17-25.801, F.A.C.---This-general-permit-shall-not-expire-and-shall-not-be-subject-to Section-17-4.540(13)-unless-suspended-or-revoked-in-accordance-with-Section 17-4.530(5),~~

(a) facilities which discharge into a stormwater discharge facility which is permitted pursuant to Section 17-25.040 or Section 17-25.035(1)(b) ~~or-(d),~~ (c) or (e), F.A.C. or which was previously approved pursuant to a noticed exemption under Section 17-25.030 where the appropriate treatment criteria specified in this chapter and applied to the permitted or exempt facility are not exceeded by the discharge; however, this does not authorize discharge to the permitted or exempt facility without the facility owner's prior written consent; or,

(b) facilities which provide retention, or ~~detention-with-filtration,~~ of use an underdrain system designed in accordance with Section 17-25.025(1) and (2) or (4) to percolate the runoff from the first one inch of rainfall; or, as an option, for ~~projects-or-project-subunits-with~~ drainage areas less than 100 acres, facilities which ~~provide-retention,-or-detention-with filtration,-of~~ so treat the first one half inch of runoff. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment pursuant to Section 17-25.025~~(9)~~, (1)(c), F.A.C.; or,

(c) facilities designed pursuant to Section 17-25.025(5) F.A.C. which

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provide extended wet detention for the first inch of runoff, or the total runoff of 2.5 inches times the acreage of impervious surface associated with all contributory areas, whichever is greater. However, facilities which discharge directly to Outstanding Florida Waters shall provide additional treatment pursuant to Section 17-25.025 (1)(c); or,

(d) ~~(c)~~ modification or reconstruction by a city, county, state agency, special district with drainage responsibility, or water management district of an existing stormwater management system which is not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designated uses of waters of the state; or,

(e) ~~(d)~~ facilities of stormwater management systems that include a combination of management practices including but not limited to retention basins, swales, pervious pavement, landscape or natural retention storage that will provide for the percolation of the runoff from a three-year one-hour design storm.

(2) Except as provided in subsection (1), this general permit is subject to the general conditions of Rule 17-4.540 and the following special conditions:

(a) the stormwater discharge facilities shall be designed and constructed in accordance with the design and performance standards in Section 17-25.025, F.A.C.; and,

(b) adequate provisions have been made for operation and maintenance of the proposed facility; and,

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(c) the design, construction and operation of the stormwater discharge facility shall comply with all other applicable requirements of this Chapter; and,

(d) the permittee shall submit appropriate design analysis, calculations, drawings, specifications and other information necessary to describe, document and verify that the proposed stormwater discharge facility qualifies for the general permit; and,

(e) the permittee or engineer of record shall file with the Department within 30 days after the facility's completion of construction record drawings and certification that the new stormwater discharge facility, as constructed, qualifies for the general permit.

(f) this general permit does not relieve the permittee of the responsibility for obtaining a dredge and fill permit where it is required.

Specific Authority: 403.814(1), 403.912, F.S.

Law Implemented: 403.061, 403.087, 403.088, 403.121, 403.141, 403.161, 403.182, 403.502, 403.702, 403.908, 403.814, F.S.

History: New 5-8-85, Amended, _____.

Previously numbered as 17-4.71. Formerly 17-4.710.

17-25.040 Construction Permit Requirements for New Stormwater Discharge Facilities.

(1) Any person intending to construct a new stormwater discharge facility, except as exempted pursuant to Section 17-25.030, Florida Administrative Code, or as permitted ~~noted~~ in Section 17-25.035, or as

permitted in Section 17-25.042, or as noted in Section 17-25.060, Florida Administrative Code, shall apply to the Department for a construction permit, using forms provided by the Department, prior to commencement of construction of the stormwater discharge facility. In a geographical area where delegation has occurred, pursuant to Section 17-25.050, Florida Administrative Code, application shall be made pursuant to the provisions of the rules of the entity receiving the delegation.

(2) Construction of a new stormwater discharge facility shall not be undertaken without a valid construction permit as required pursuant to this section.

(3) Modifications to an existing stormwater management system that will increase the discharge of the stormwater discharge facility beyond its previously designed and constructed capacity, or increase pollution loading, or change points of discharge, except for emergency repairs, are considered new stormwater discharge facilities for purposes of this chapter.

(4) A construction permit may be issued to the applicant, upon such conditions as the Department may direct, only if the applicant affirmatively provides the Department with reasonable assurance based on plans, test results and other information, that the construction, expansion, modification, operation, or activity of the stormwater discharge facility will not discharge, emit, or cause pollution in contravention of Department standards, rules or regulations.

(5) A showing by the applicant that the facility design will provide treatment equivalent to either retention, or detention ~~with filtration~~, as

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described in ~~this Chapter, of the runoff from the first one inch of rainfall, or, as an option for projects or project subunits with drainage areas less than 100 acres, the first one half inch of runoff,~~ Section 17-25.035 (1)(b) or (c) F.A.C. shall be presumed to provide reasonable assurance pursuant to subsection (4) above, provided that adequate provisions have been made for operation and maintenance of the proposed facility. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment as specified in Section 17-25.025~~(9)~~ (1)(c) F.A.C.

(6) Regional stormwater discharge facilities shall be permitted upon application and a showing by the applicant that:

(a) the facility will provide treatment equivalent to either retention, or detention ~~with filtration, of the runoff from the first one inch of rainfall, or, as an option, for facilities with a drainage area less than 100 acres, the first one half inch of runoff, and,~~ as described in Section 17-25.035(1)(b) or (c) F.A.C., and,

(b) facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment as specified in Section 17-25.025~~(9)~~ (1)(c) F.A.C.; and,

(c) the facility is designed to meet the treatment criteria specified in (a) or (b) above for projected future land use conditions and associated stormwater volumes; and,

(d) the owner of the facility notifies the Department on a semi-annual basis, on forms provided by the Department, of all new projects and their

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associated stormwater volumes that have been allowed to discharge stormwater into the regional facility and certifies that the maximum allowable treatment volume of stormwater has not been exceeded.; and,

(e) adequate provisions have been made for the operation and maintenance of the proposed facility.

(7) In otherwise determining whether reasonable assurance has been provided, the Department shall, where appropriate, consider:

(a) whether best management practices are proposed, such as those described in "A Manual of Reference Management Practices for Urban Activities (July, 1978)", "A Manual of Reference Management Practices for Construction Activities (December, 1977)", "A Manual of Reference Management Practices for Agricultural Activities (November 1978)", "Silviculture Best Management Practices Manual (1979)", "Stormwater Management Manual (October 1981)", or best management practices described in manuals adopted by the Environmental Regulation Commission pursuant to Section 17-25.050, or other appropriate best management practices. The manuals listed above by name are adopted and made a part of this rule by reference. Copies of these documents may be obtained by writing the Department, and may be inspected at all Department offices;

(b) the public interest served by the discharge;

(c) the probable efficacy and costs of alternative controls;

(d) whether the proposed water quality benefits are reasonably related to the costs of the controls; and

(e) whether reasonable provisions have been made for the operation and

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maintenance of the proposed facility.

Specific Authority: 403.031, 403.061, 403.912, F.S.

Law Implemented: 403.021, 403.031, 403.061, 403.087, 403.088, F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 3-28-84, 5-8-85,_____. Previously numbered as 17-25.04.

17-25.042 Permit Requirements for Wetlands Stormwater Discharge Facilities.

(1) The wetlands stormwater discharge facility performance standards and other provisions relating to such facilities are an initial but necessary step by the Department in a field in which there exists limited knowledge. In an effort to further refine the state's wetlands stormwater discharge facility policies, monitoring data and other pertinent information relating to the performance standards will be collected and analyzed and periodic reports of the results of this monitoring shall be made available to the public. The Department must attempt to ensure that the wetlands stormwater discharge facility is compatible with the ecological characteristics of the wetlands utilized for stormwater treatment and to ensure that water quality standards will not be violated by discharges from wetlands stormwater discharge facilities. To achieve these goals, specific performance standards are set forth in this chapter. However, recognizing the complexities and concerns of implementing wetlands stormwater treatment performance standards, the Department shall review the monitoring data and

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other pertinent information on a regular basis. The Department shall present the information to the Commission at a public hearing no later than April 1, 1989. Unless the Commission affirmatively determines that the performance standards remain appropriate, or amends them as it deems necessary, Section 17-25.042(6) shall be repealed effective April 1, 1989.

(2) The wetlands to be used for stormwater management are those:

(a) which are connected to other waters by artificial watercourses; or

(b) which are connected to other waters solely by an intermittent watercourse.

(3) Any person who owns or has written authorization to use a wetland for stormwater treatment shall apply to the Department for a wetlands stormwater discharge facility permit, using forms provided by the Department, and shall receive such permit prior to commencement of construction of the stormwater discharge facility. The application shall be processed by the Department according to the procedures of Chapter 17-4, F.A.C.

(4) A wetlands stormwater discharge facility permit may be issued to the applicant, upon such conditions as the Department may direct, only if the applicant affirmatively provides the Department with reasonable assurance based on plans, test results or other information, that the construction, operation, or activity of the stormwater discharge facility shall not emit, or cause pollution in downstream waters in contravention of Department standards, rules or regulations.

(5) In the review of wetlands stormwater discharge facility permit

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applications, the Department shall consider the following:

(a) compliance of the wetlands stormwater discharge facility permit with the performance standards specified in Section 17-25.042(6), F.A.C.

(b) if the applicant is unable to show compliance with the performance standards in Section 17-25.042(6), the applicant may qualify for a wetlands stormwater discharge facility permit using alternative design and performance standards approved by the Department provided that the use of the wetlands is compatible with the ecological characteristics of the wetland and the applicant complies with Section 17-25.042(4), F.A.C.

(c) if the applicant proposes to dredge or fill in the wetlands used for stormwater treatment, the Department in its review of the permit application shall evaluate the adverse effects of the dredging or filling on the treatment capability of the wetland.

(6) A showing by the applicant that the wetlands stormwater discharge facility design complies with the performance standards listed below shall create a presumption in favor of the issuance of the permit:

(a) the facility complies with the requirements of Section 17-25.060(2), F.A.C.

(b) the facility is part of a comprehensive stormwater management system that utilizes wetlands in combination with other best management practices to provide treatment of the runoff from the first one inch of rainfall; or, as an option for projects or project subunits with drainage areas less than 100 acres, the first one-half inch of runoff. Those facilities which directly discharge to Outstanding Florida Waters shall

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provide additional treatment as specified in Section 17-25.025(9), F.A.C.

(c) the utilization of wetlands for stormwater treatment shall not adversely affect the wetland by disrupting the normal range of water level fluctuation of the wetland as it existed prior to construction of the wetlands stormwater discharge facility. Normal range of water level fluctuation will be defined as the maintenance of the fluctuating water surface changes between the normal low water and the normal high water of the wetland system so as to prevent the desiccation or over impoundment of the wetland. The Department shall use water level data, lines on the trees, adventitious roots or other hydrological and biological indicators to determine the normal low and normal high water levels. Upland detention may be necessary to attenuate peak flows and meet the water level fluctuations specified above. When the normal range of water level fluctuations has been artificially altered, the Department shall establish an acceptable range of water level fluctuation based on historical information as to the previous size and nature of the wetlands, if available. If such information is not available, the range of water level fluctuation shall be derived from sound scientific principles or from analysis of other natural wetland systems in the vicinity.

(d) the wetlands stormwater discharge facility must be able to contain the runoff as specified in Section 17-25.042(6)(b), F.A.C. within the wetlands. Where the wetlands stormwater discharge facility alone cannot contain the runoff volume specified in (b) above within the water level ranges specified in (c) above, the other best management practices of the

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stormwater management system shall not adversely affect the ability of the wetlands stormwater discharge facility from meeting the requirements of this section. The design features of the facility shall maximize residence time of the stormwater within the wetland. The outfall structure shall be designed to bleeddown the volume specified in Section 17-25.042(6)(b) in no less than 120 hours with no more than one-half of the volume to be discharged within the first 60 hours.

(e) stormwater shall be discharged into the wetlands utilized so as to minimize the channelized flow of stormwater by employing methods including, but not limited to, sprinklers, overland flow or spreader swales.

(f) facilities which receive stormwater from areas which are a potential source of oil and grease contamination in concentrations exceeding applicable water quality standards shall include a baffle, skimmer, grease trap or other mechanism to minimize the amounts of oils and greases entering the wetlands utilized for stormwater treatment.

(g) erosion and sediment controls shall be used during construction and operation of the facility to minimize sedimentation of the wetlands utilized for stormwater treatment. The sediment control mechanism shall be built in the uplands and be of sufficient size and design to minimize resuspension and discharge of collected sediments into the wetland and to allow for recurring maintenance removal of sediments without adverse impact to the wetland.

(7) The operation phase of this permit shall not become effective until:

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(a) an engineer certifies that the wetlands stormwater discharge facility has been constructed in accordance with the design approved by the Department. Within 30 days after completion of construction of the wetlands stormwater discharge facility, the permittee shall submit the certification and two copies of as-built drawings and notify the Department that the facility is ready for inspection. The certification prepared by an engineer (not necessarily the project design engineer but one who has been retained or employed by the permittee to provide professional engineering services during the construction phase of project completion) shall be made on forms provided by the Department. The engineer shall certify therein that the facility has been constructed substantially in accordance with approved plans and specifications, and that any deviations will not prevent the facility from functioning in compliance with the requirements of this chapter. The engineer shall note and explain substantial deviations from the approved plans and specifications. The certification shall be based upon on-site observation of construction (scheduled and conducted by the engineer or by a project representative under his direct supervision) for the purpose of determining if the work was completed in compliance with approved plans and specifications;

(b) the permittee submits to the Department documentation that adequate provisions have been made for the operation and maintenance of the facility and for meeting any special permit conditions, such conditions may include water quality monitoring.

(8) In order to establish a reliable, scientifically valid data base

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upon which to evaluate the performance standards and the performance of the wetlands stormwater discharge facility, a monitoring program may be required. Monitoring programs shall provide the Department with comparable data for different types of wetlands and drainage designs. Data to be collected may include, but not be limited to, sedimentation rate, sediment trace metal concentrations, sediment nitrogen and phosphorus concentrations, changes in the frequency, abundance and distribution of vegetation and inflow and outflow water quality for nutrients, turbidity, oils and greases, bacteria and other parameters related to the specific site conditions. Inflow and outflow water quality parameters will be monitored on such storm event occurrences as established by the Department based on a site specific basis. Analytical data must be provided using standard procedures prescribed by a Department approved Quality Assurance Plan and reported in a format provided by the Department. The Department shall eliminate the requirement to continue the monitoring program upon its determination that no further data is necessary to evaluate the performance standards or ensure compliance with the performance standards and applicable water quality standards.

(9) A permit issued pursuant to this section shall be valid for a period of up to five years from the date of issue unless an earlier renewal date is specified by the Department. Both construction and operation of the facility will be covered by the initial permit.

(10) If the facility will continue to operate after the expiration date of the initial permit, the permit must be renewed. A permit may be renewed

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Upon submittal to the Department of a certification that the facility is operating in compliance with the performance criteria of this section and is not causing water quality violations of downstream waters. The certification shall be treated as an application for permit renewal for purposes of the time provisions specified in Section 120.60, F.S.

(11) The permit may be transferred only pursuant to Florida Administrative Code Rule 17-4.120. Upon transfer, all original permit conditions, schedules and criteria continue to be applicable.

Specific Authority: 403.061, 403.912, 403.918, F.S.

Law Implemented: 403.087, 403.088, 403.918, 403.919, 403.921, 403.924, 403.927, 403.929, F.S.

History: New 5-8-85.

17-25.050 Delegation.

(1) The Department may, after notice in the Florida Administrative Weekly pursuant to the provisions of Chapter 120, Florida Statutes, delegate to either local governments or water management districts seeking such delegation, as provided in Sections 403.182, 403.812, Florida Statutes, and this section, the authority to process notices, issue or deny permits, initiate enforcement actions, and monitor for compliance as provided in Sections 403.182, 403.812, Florida Statutes, and this section. Delegation shall not include the authority for a local government or a water management district to issue or deny permits for its own activities except replacement items or maintenance of existing facilities.

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(2) A water management district which has been delegated stormwater regulation pursuant to this section may establish alternative requirements which protect the designated uses of waters of the state provided that the alternative requirements are approved by the Environmental Regulation Commission pursuant to Section 403.804, Florida Statutes and have been incorporated by reference as department stormwater rules in 17-25.090, F.A.C. These alternative requirements incorporated as department rules shall apply in lieu of the provisions of this Chapter in the area of delegation, and applicable surface water management and stormwater permit discharge standards shall be applied in one permit proceeding. Following delegation to a water management district, those activities within the district that meet the exemption criteria of Section 17-25.030(1) shall be exempt from the requirements of Section 17-4.242 regarding Outstanding Florida Waters.

(3) A local government which has been delegated stormwater regulation pursuant to this section may also establish by rule, ordinance or local law, alternative requirements provided the Department determines such alternative requirements are compatible with, or more stringent than, those imposed by this chapter.

Specific Authority: 403.061, 403.062, 403.182, 403.805, 403.812, F.S.

Law Implemented: 403.021, 403.061, 403.062, 403.182, 403.805, 403.812, F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84, 5-8-85. Previously numbered as 17-25.05.

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17-25.060 Relationship to Other Permitting Requirements.

(1) Whenever the construction of a new stormwater discharge facility requires that a dredge or fill permit be secured pursuant to Sections 17-12.150 or 17-12.160 or Chapter 17-12, Florida Administrative Code, or whenever other rules of the Department require that a permit, section 401 federal Clean Water Act certification or other certification be secured, all applicable stormwater requirements under this chapter shall be reviewed as part of those permit applications. A separate permit application under this chapter shall not be required. If the applicant requests a separate stormwater permit, the applicant must notify the Department of any other Department permits, exemptions, or certifications which have or will be requested for the project.

(2) The permit requirements of Chapter 17-4 or other applicable rules, rather than those of this chapter, shall apply to discharges which are a combination of stormwater and industrial or domestic wastewater or which are otherwise contaminated by non-stormwater sources unless:

(a) the stormwater discharge facility is capable of providing treatment of the non-stormwater component sufficient to meet state water quality standards; and

(b) the applicant requests that the permit requirements of this Chapter apply.

Specific Authority: 403.061, 403.062, 403.087, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.101, 403.702, 403.708, F.S.

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History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84, 5-8-85. Previously numbered as 17-25.06.

17-25.070 Transferability of Other Chapters.

Specific Authority: 403.061, 403.062, 403.087, 403.504, F.S.

Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.101, 403.502, 403.702, 403.708, F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Repealed 5-1-82.

17-25.080 General Provisions.

Nothing under this chapter shall preclude:

(1) stormwater effects from being considered in the evaluation of other types of permits where such consideration is relevant to a determination of compliance with applicable Department requirements.

(2) the legal joinder in a permitting proceeding under this chapter of persons who own or control unpermitted stormwater discharge systems which comprise a significant portion of the stormwater discharge facility.

(3) the Department from taking appropriate legal action including but not limited to the requiring of a permit to prevent the impairment of a use for which a water of the state has been designated under Chapter 17-3, Florida Administrative Code.

(4) the Department from entering interagency or interlocal agreements to accomplish the provisions of this chapter.

Specific Authority: 403.061, 403.062, 403.087, F.S.

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Law Implemented: 403.021, 403.061, 403.087, 403.088, 403.131, 403.141, 403.161, 403.708, F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-88. Previously numbered as 17-25.08.

17-25.090 List of Entities to Which Permitting Pursuant to this Chapter has been Delegated; Addresses; Delegation Documents and Rules Adopted by Reference.

(1) South Florida Water Management District; Post Office Box V; West Palm Beach, Florida 33402

(a) Surface Water Management Rule; Chapter 40E-4, Florida Administrative Code (March 9, 1983);

(b) General Surface Water Management Rule; Chapter 40E-40, Florida Administrative Code (December 1, 1982);

(c) "Basis of Review for Surface Water Management Permit Applications within the South Florida Water Management District - May 1986."

(d) Nothing in this delegation shall prevent the Department from considering the stormwater impact of dredging or filling regulated pursuant to 17-12.150 or 17-12.160 or Chapter 17-12, Florida Administrative Code, or the District from implementing applicable provisions of Chapters 17-3 and 17-4, Florida Administrative Code. Provided, however, in those cases where the water management district has issued a surface water management permit pursuant to Chapter 373, Part IV, and this delegation, the Department shall confine its review of stormwater quality impacts solely to those generated

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by dredging and filling regulated pursuant to Rules 17-12.150 and 17-12.160, Florida Administrative Code.

(2) Southwest Florida Water Management District; 2379 Broad Street, Brooksville, Florida 33512.

~~(a) Regulation of Stormwater Discharge; Chapter 17-25, Florida Administrative Code, except for Section 17-25.042.~~

(a) Management and Storage of Surface Waters Rule; Chapter 40D-4, Florida Administrative Code (March 1, 1988);

(b) General Surface Water Management Permits Rule; Chapter 40D-40, Florida Administrative Code (March 1, 1988);

(c) Basis of Review for Surface Water Management Permit Applications Within the Southwest Florida Water Management District (March 1, 1988).

(d) When a proposed stormwater discharge facility is associated with activities which require a dredge and fill, industrial waste, domestic waste, solid waste or hazardous waste permit from the Department, stormwater permit applications and ~~exemption~~ general permit notices must be submitted to the Department and the Department shall regulate such stormwater discharge facilities within the District.

(3) Suwannee River Water Management District; Route 3, Box 64, Live Oak, Florida 32060.

(a) Surface Water Management and Works of the District Rule; Chapter 40B-4, Florida Administrative Code (August 15, 1985).

(b) The permitting of wetlands stormwater discharge facilities pursuant to Section 17-25.042 is not delegated to the District.

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(4) St. Johns River Water Management District, Post Office Box 1429, Palatka, Florida 32078.

(a) Regulation of Stormwater Discharge, Chapter 40C-42, Florida Administrative Code (February 1986).

(b) The permitting of wetlands stormwater discharge facilities pursuant to Section 17-25.042;

(c) When a proposed stormwater discharge facility is associated with activities which require an industrial waste, domestic waste, solid waste, or hazardous waste permit from the Department, stormwater permit applications and exemption general permit notices must be submitted to the Department and the Department shall regulate such stormwater discharge facilities within the District.

Specific Authority: 403.061, 403.812, F.S.

Law Implemented: 403.021, 403.061, 403.812, F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-83, 1-26-84, 3-28-84, 5-8-85, 5-14-86, and 5-25-88, and _____.

Previously numbered as 17-25.09.

17-25.100 Effective Date.

Specific Authority: 120.54(12)(a), 403.061(7), F.S.

Law Implemented: 120.54(12)(a), 403.051, F.S.

History: Formerly 17-4.248, Amended and Renumbered 2-1-82, Repealed 1-26-84.

~~17-25.801 General Permit for New Stormwater Discharge Facilities.~~

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~~(1) A general permit is hereby granted to any person for the construction and operation of the following types of new stormwater discharge facilities as set forth in Section 17-25.035, F.A.C., provided that notice to the Department pursuant to Rule 17-4.530 is submitted on Form 17-1.215(2) Revised April 1985. This general permit shall not expire and shall not be subject to Section 17-4.540(3) unless suspended or revoked in accordance with Section 17-4.530(5):~~

~~(a) facilities which discharge into a stormwater discharge facility which is permitted pursuant to Section 17-25.040, F.A.C. or Section 17-25.035(1)(b) or (d), F.A.C. or which was previously approved pursuant to a noticed exemption under Section 17-25.030 where the appropriate treatment criteria specified in Chapter 17-25 and applied to the permitted or exempt facility are not exceeded by the discharge; however, this exemption does not authorize discharge to the permitted or exempt facility without the facility owner's prior written consent; or,~~

~~(b) facilities which provide retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for projects or project amounts with drainage areas less than 100 acres, facilities which provide retention, or detention with filtration, of the first one half inch of runoff. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment pursuant to Section 17-25.025(9), F.A.C.; or,~~

~~(c) modification or reconstruction by a city, county, state agency, special district with drainage responsibility, or water management district~~

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~~of an existing stormwater management system which is not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designated uses of waters of the state; or,~~

~~(d) facilities of stormwater management systems that include a combination of management practices including but not limited to retention basins, swales, pervious pavement, landscape or natural retention storage that will provide for the percolation of the runoff from a three year one hour design storm.~~

~~(2) Except as provided in subsection (1), this general permit is subject to the general conditions of Rule 17 4.540 and the following special conditions:~~

~~(a) the stormwater discharge facilities shall be designed and constructed in accordance with the design and performance standards set forth in Section 17 25.025, F.A.C.; and,~~

~~(b) adequate provisions have been made for the operation and maintenance of the proposed facility; and,~~

~~(c) The design, construction and operation of the stormwater discharge facility shall comply with all other applicable requirements of Chapter 17 25, F.A.C.; and,~~

~~(d) the permittee shall submit appropriate design analyses, calculations, drawings, specifications and other information necessary to describe, document and verify that the proposed stormwater discharge facility qualifies for the general permit; and,~~

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~~(e) the permittee or engineer of record shall file with the Department within 30 days after the facility's completion of construction an as-built certification that the new stormwater discharge facility, as constructed, qualifies for the general permit.~~

~~(f) this general permit does not relieve the permittee of the responsibility for obtaining a dredge and fill permit where it is required.~~

~~Specific Authority: 403.814(1), 403.912, F.S.~~

~~Law Implemented: 403.061, 403.087, 403.088, 403.121, 403.141, 403.161, 403.182, 403.502, 403.702, 403.908, 403.814, F.S.~~

~~History: New 5-8-85.~~

~~Previously numbered as 17-4.71. Formerly 17-4.710.~~

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APPENDIX C.

Southwest Florida Water Management District

Chapter 40D-4
Management and Storage of Surface Waters

March 1988

Part A - Surface Water Management Rules

I. General

A. Southwest Florida Water Management District Authority

The Southwest Florida Water Management District was created by Chapter 61-691, Laws of Florida (1961), for purposes of flood control and water conservation. In 1972 the Florida Legislature enacted Chapter 373, Florida Statutes (F.S.), the Florida Water Resources Act of 1972 (Act), which greatly expanded the District's responsibilities from flood control to a full range of water management activities.

The Act governs the regulation of all waters in the state, unless exempted by law. Waters in the state are defined to include all water on or beneath the surface of the ground or in the atmosphere.

Generally, the purposes for which the Act was adopted are to provide for management of water and related land resources, to promote the conservation, development and proper utilization of surface and groundwater, to provide water storage for beneficial purposes, to prevent damage from floods, soil erosion and excessive drainage, to preserve natural resources, fish and wildlife, and to promote recreational development.

The District is governed by a nine-member board which is responsible for the overall administration of District programs, the regulatory program implementing the Act and the development of a water use plan. The District is also divided into nine basins--the Green Swamp, Alafia River, Hillsborough River, Northwest Hillsborough, Coastal Rivers, Pinellas-Anclote River, Withlacoochee River, Peace River and Manasota Basins--which are governed by basin boards; the basin board for the Green Swamp Basin is the District Governing Board. The basin boards fund primary water resource development projects, studies and secondary water control facilities.

The Act provides for the establishment of permit programs for the regulation of consumptive use of water, well construction, surface water management systems, artificial recharge and utilization of works or land of the District. Except for artificial recharge and consumptive use, primary regulatory authority resides in the Department of Environmental Regulation with direction to delegate the authority to the water management districts to the maximum extent practicable. This District has been delegated all programs, as well as storm water regulation authority.

The District has implemented all the permitting programs authorized by the Act by adopting rules which are published as Chapter 40D of the Florida Administrative Code (F.A.C.).

B. Permitting Procedures

The District is governed by Chapters 373 and 120, F.S., and Chapter 40D, F.A.C. Together they provide an administrative framework for the resolution of conflicts among applicants, objectors and the District. Within this framework, if no objections are received and the applicant agrees with the staff's recommendations, the application can usually be considered informally before the Governing Board. If, however, the applicant disagrees with the staff's recommendations, or someone whose substantial interest may be affected objects, a formal hearing may be held either before the Governing Board or before a hearing officer from the Department of Administrative Hearings. In either case, adequate safeguards are provided so that disputes can be resolved judiciously and expeditiously.

Upon receipt of an application for an individual or conceptual permit, the District will request within 30 days any necessary additional information. Upon receipt of a complete application, the District will issue or deny the permit within 90 days unless a petition for hearing is filed or the time limitations of Chapter 120, F.S., have been waived by the applicant.

C. Permitting of Surface Water Management Systems

1. Statutory Provisions (Part IV, Chapter 373 F.S.)

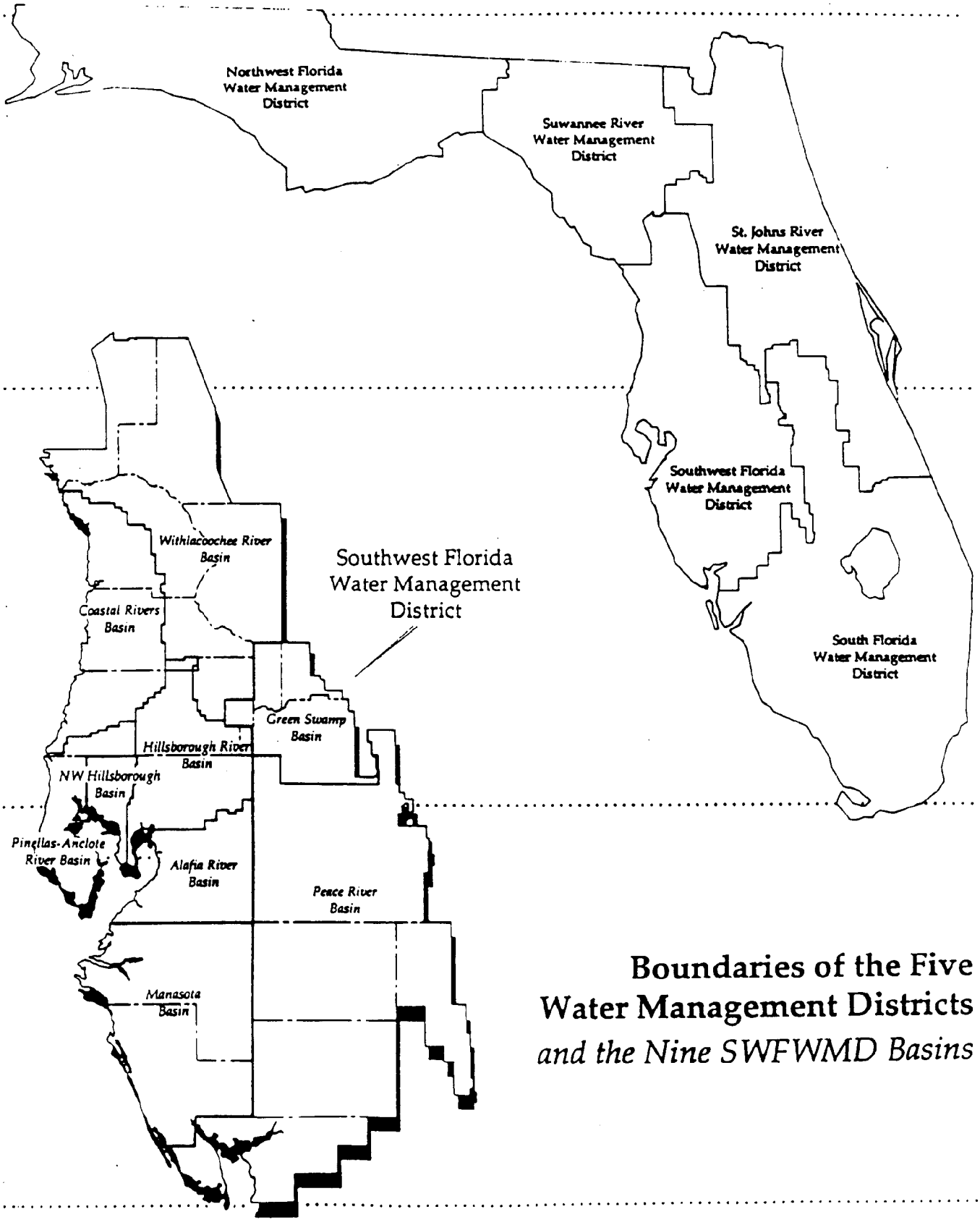
Part IV of the Act deals with surface water management. Generally, permits may be required by the water management districts for construction, alteration and operation of most real property improvements which are designed to control surface waters.

An applicant for a surface water management permit must show that the proposed project is consistent with the goals and policies expressed in Declaration of Policy, 373.016, F.S., and State Water Use Plan, 373.036, F.S., that the construction or alteration of the surface water management system will not be harmful to the water resources of the District, and that the operation and maintenance of the system will not be inconsistent with the overall objectives of the District or harmful to the water resources of the District.

2. Rules of the Southwest Florida Water Management District (Chapter 40D, F.A.C.)

Chapter 40D-4, F.A.C., describes the permit requirements for construction, alteration, or operation of surface water management systems. Generally, all impacts to wetlands or construction, alteration or operation of dams, impoundments, reservoirs, appurtenant works or works as defined in the Act require a permit from the District. To satisfy the permit requirement, an applicant must receive an individual permit or

qualify for general permits. Individual permits are issued by the Governing Board upon application and compliance with Part IV of the Act and Chapter 40D-4, F.A.C., with additional criteria for evaluating projects incorporated by reference in Rule 40D-4.091, F.A.C. Further, additional criteria may be imposed if the project is to be located within an area in which the District has adopted alternate design criteria (see Appendix 6).



Boundaries of the Five Water Management Districts
and the Nine SWFWMD Basins

II. Chapter 40D-4

This Rule sets forth the permit requirements for projects which do not qualify for General Permits under Chapter 40D-40, F.A.C. There are three types of permits issued under Chapter 40D-4, F.A.C.: 1) Conceptual Approvals, 2) Construction Permits, and 3) Operation Permits.

Section 40D-4.301, F.A.C., lists the conditions for issuance of permits under the chapter. The specific design criteria with which a project must comply are incorporated by reference in Rule 40D-4.091, F.A.C., and are reproduced as Part B of this manual.

The difference between a conceptual approval and the other permits authorized under this chapter is that a conceptual approval does not authorize any construction of a surface water management system. A conceptual approval is valid for a period of two[1] years and a construction permit is valid for three years. An extension of these permits may be granted (see Rules 40D-4.321 and 40D-4.331).

The Application Form and Checklist of Information for a project to be permitted under this chapter are included within this Manual.

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[1]The adopted Basis of Review stated six years. At the final adoption hearing for rule amendments to Chapters 40D-4 and 40D-40, F.A.C., the proposal that conceptual approvals expire six years from the date of issuance was not adopted. Therefore, "six" was replaced with "two" to correctly reflect the content of Rule 40D-4.321, F.A.C.

RULES OF THE
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
CHAPTER 40D-4
MANAGEMENT AND STORAGE OF SURFACE WATERS

40D-4.011 Policy and Purpose.

(1) It is the policy of the District to regulate and control the management and storage of all surface waters within its boundaries pursuant to the provisions of Chapter 373, Florida Statutes, and Chapters 17-40 and 40D. However, the District recognizes the limits on its licensing resources. Therefore, it is the intent of the District to focus its efforts on new surface water management systems and alterations to existing surface water management systems which have, or probably will have, a significant impact on the water resources of the District, including wetlands and other natural resources.

(2) The rules in this chapter implement the comprehensive surface water management permit system contemplated in part IV of Chapter 373, Florida Statutes. As a result of the passage of Chapter 84-79, Laws of Florida, the Warren S. Henderson Wetlands Protection Act of 1984, the District has adopted the rules in this chapter and Chapter 40D-40 to ensure continued protection of the water resources of the District including wetlands and other natural resources.

(3) Additional rules relating to surface water management are found in Chapter 40D-40 (General Surface Water Management Permits).

(4) The Department of Environmental Regulation (DER) delegated to the District the authority to regulate storm water run-off. To simplify the permitting process, the District combined the regulation of surface and storm water in these rules. Therefore, the rules contained in this chapter, Chapter 40D-40, and the District's "Basis of Review for Surface Water Management Permit Applications within the Southwest Florida Water Management District" (Basis of Review) also address storm water regulation pursuant to Chapter 403, Florida Statutes, and Chapter 17-25. The

District's Basis of Review includes storm water system design criteria, as well as additional technical and administrative information for applicants for permits.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.413, 373.416, 373.426, FS. History - Readopted 10-5-74. Amended 10-1-84 and 3-1-88. Previously numbered 16J-4.01.

40D-4.021 Definitions.

When used in this chapter:

(1) "Surface water management permit" means a letter of conceptual approval, construction permit or operation permit.

(2) "Letter of conceptual approval" or "conceptual approval" means a surface water management permit issued by the District approving the concepts of a master plan for a surface water management system which is binding upon the District and the permittee based upon the rules in effect at the time of filing of the conceptual application and constitutes final District action so that construction and operation permits for each phase will be reviewed under the permitting criteria in effect when the application for conceptual approval was filed.

(3) "Construction permit" means a surface water management permit issued by the District authorizing construction, alteration or abandonment of a surface water management system in accordance with the terms and conditions of the permit.

(4) "Operation permit" means a surface water management permit issued by the District authorizing the operation and maintenance of a surface water management system in accordance with the terms and conditions of the permit.

(5) "Surface water management system" means the collection of facilities, improvements, or natural systems whereby surface waters are collected, controlled, conveyed, impounded, or obstructed. The term includes dams, impoundments, reservoirs, appurtenant works and works as defined in subsections 373.403(1)-(5), Florida Statutes.

(6) "New surface water management system" means any surface water management system which is not in existence on October 1, 1984, or not authorized to be constructed on October 1, 1984.

(7) "Alteration" means any activity resulting in substantial expansion or change of a surface water management system that will increase or decrease the design discharge of the system, increase pollutant loading, change the point or points of discharge, or intrude into or otherwise adversely impact wetlands by rim-ditching, draining, filling or excavation. Routine custodial maintenance and repairs shall not constitute alterations.

(8) "Surface waters of the state" means those surface waters regulated pursuant to subsection 403.031(12), Florida Statutes.

(9) "Surface waters" are defined in subsection 373.019(10), Florida Statutes.

(10) "Wetlands" means those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil condition for growth and reproduction, such as swamps, marshes, bayheads, cypress ponds, sloughs, wet prairies, wet meadows, river overflows, mud flats and natural ponds.

(11) "Total land area" means land holdings under common ownership or control which are contiguous, or land holdings which are served by a common surface water management system.

(12) "Construction" means any on site activity which will result in

the creation of a new surface water management system, or the abandonment or alteration of an existing surface water management system, including the building, assembling, expansion or recontouring of the property; the erection of buildings or other structures, or any part thereof; or land clearing.

(13) "Basis of Review for Surface Water Management Permit Applications within the Southwest Florida Water Management District," or "Basis of Review" is the document incorporated by reference in Rule 40D-4.091, which provides threshold design, administrative and technical criteria for permit applicants.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.403, 373.423, FS. History - Readopted 10-5-74. Amended 10-1-84 and 3-1-88. Previously numbered 16J-4.02.

40D-4.031 Implementation, Effective Date and Applicability.

(1) Chapter 40D-4 shall continue in implementation from January 1, 1975, throughout the entire area comprising the District as of 11:59 p.m., December 31, 1976; and from August 3, 1977, throughout the areas annexed into the Peace and Withlacoochee River Basins and within the Manasota Basin; and shall be implemented October 16, 1978, and apply within the area annexed into the District by Chapter 78-65, Laws of Florida.

(2) Amendments to these rules adopted October 27, 1987, including the Basis of Review, are effective March 1, 1988, and apply to permit applications filed on or after March 1, 1988.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented, 373.413, 373.416, 373.426, FS., 76-243, Laws of Florida. History - Readopted 10-5-74, Amended 9-4-77, 10-16-78, 10-1-84 and 3-1-88. Previously numbered 16J-4.03.

40D-4.041 Permits Required.

(1) Unless expressly exempt by law or District rule a surface water management permit must be obtained from the District prior to:

(a) The construction and operation of any new surface water management system, or

(b) The alteration or abandonment of any surface water management system.

(2) The District issues three types of surface water management permits: letters of conceptual approval, construction permits and operation permits. Construction and operation permits may be issued in three forms: individual permits, general permits, and noticed general permits.

(a) A letter of conceptual approval may be issued for projects that are to be developed in phases. A letter of conceptual approval does not authorize any construction.

(b) An individual construction or operation permit may be issued for projects that do not qualify for general permits under Chapter 40D-40. An individual permit may authorize construction, alteration, abandonment, operation and maintenance of a surface water management system.

(c) A general construction or operation permit may be issued for surface water management systems which satisfy thresholds and conditions contained in Chapter 40D-40. A general permit may authorize construction, alteration, abandonment, operation and maintenance of a surface water management system.

(d) A noticed general construction or operation permit may be issued for surface water management systems which satisfy thresholds and conditions contained in Chapter 40D-40. A noticed general permit may authorize construction, alteration,

abandonment, operation and maintenance of a surface water management system. A noticed general permit addresses compliance with state water quality standards and criteria, Chapter 17-3 and Rule 17-4.242, for storm water run-off.

(3) A permit may be required for surface water management systems exempt under subsections 40D-4.051(3) or (6) if the master drainage plan is altered so as to have an adverse impact on the off site water resources in the District.

(4) A noticed general permit is required for a surface water management system, otherwise exempt from permitting under subsections 40D-4.051(4), (6), (7) or (8), unless the system is exempt by statute or rule from storm water quality regulation or has received storm water quality review and approval by the District or by a DER permit, license or certification.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.413, 373.416, 373.426, FS. History - Readopted 10-5-74, Amended 12-31-74, 9-4-77, 6-7-78, 10-1-84, and 3-1-88. Previously numbered 16J-4.04, 16J-4.10(1),(2),(4).

40D-4.051 Exemptions.

The following activities are exempt from permitting under this chapter:

(1) The activities specified in Sections 373.406, and 403.813, Florida Statutes.

(2) The construction, alteration, or operation of a surface water management system for agricultural or silvacultural activities which satisfies the following requirements:

(a) The total land area does not equal or exceed 10 acres;

(b) The area of impervious surface will not equal or exceed 2 acres;

(c) The activities will not be conducted in wetlands;

(d) The activities will not be conducted in existing lakes, streams, or other watercourses;

(e) The surface water management system will not utilize drainage pumps or operable discharge structures;

(f) The activities will not utilize storm drainage facilities larger than one 24-inch diameter pipe, or its hydraulic equivalent;

(g) Discharges from the site will meet applicable state water quality standards, as set forth in Chapter 17-3, and Rule 17-4.242;

(h) The activities are part of a conservation plan prepared or approved by a local Soil and Water Conservation District Board organized pursuant to Chapter 582, Florida Statutes, (S.C.S.). If the S.C.S. conservation plan is not implemented according to its terms, the exemption created in this subsection does not apply.

(i) The activities can otherwise reasonably be expected not to have significant adverse water resource impacts; and

(j) The surface water management system can be effectively maintained.

(3) Any project, work or activity which has received all governmental approvals necessary to begin construction and is under construction prior to October 1, 1984.

(4) Any project, work or activity which received a surface water management permit from the District prior to October 1, 1984.

(5) Any project, work or activity which did not require a surface water management permit from the District and had received all other necessary governmental approvals to begin construction or operation prior to October 1, 1984.

(6) Any phased or long term buildout project, including a development of regional impact, planned unit development, development with a master plan or master

site plan, or similar project, which has received local or regional approval prior to October 1, 1984, if:

(a) The approval process requires a specific site plan and provides for a master drainage plan approved prior to the issuance of a building permit, and

(b) The developer has notified the District of its intention to rely upon this exemption on or before April 1, 1985.

Projects exempt under this subsection shall continue to be subject to the District's surface water management rules in effect prior to October 1, 1984.

(7) Mining, mining related activities and mining reclamation, except for phosphate. Projects exempt under this subsection shall continue to be subject to the District's surface water management rules in effect prior to October 1, 1984.

(8) (a) All normal and necessary farming and forestry operations as are customary for the area, which can be conducted without the construction of a new surface water management system. Site preparation, clearing, fencing, contouring to prevent soil erosion, soil preparation, plowing, planting, harvesting; and the construction of access roads, and the placement of bridges and culverts to facilitate these operations do not constitute construction of a new surface water management system, provided such operations and facilities do not impede or divert the flow of surface waters entering or leaving the operation or intrude into or otherwise substantially and adversely impact significant wetlands.

(b) The construction, operation and maintenance of a farming or forestry irrigation system, including headers, ditches, furrows and tailwater recovery ponds, which contain water only following a rainfall event or resulting from withdrawals or diversions from ground water or surface water by wells or pumps. Nevertheless, a Consumptive Use Permit may be required for such withdrawals or diversions.

(c) The maintenance of existing irrigation and drainage ditches, dikes and insect control structures, provided that no more dredging is to be performed than is necessary to restore the dike or irrigation or drainage ditch to its original design specifications.

(9) Phosphate mining and mining related surface water management systems are exempt from the requirements of this chapter, provided that all conditions for exemption in Rule 40D-4.053(1) are met. However, nothing in this section is intended to exempt phosphate mining from the Department of Environmental Regulation's authority for permitting in dredge and fill jurisdictional areas.

(10) Phosphate mine reclamation and restoration conducted in accordance with Chapter 16C-16, the Mine Reclamation rules of the Florida Department of Natural Resources, is exempt from the requirements of this chapter provided that all conditions for exemption in Rule 40D-4.053(2) are met.

(11) Construction or private use of a single family dwelling unit, duplex, triplex or quadruplex that is not part of a larger common plan of development or sale and does not involve wetlands regulated under Chapter 403, Florida Statutes, or isolated wetlands regulated under Chapter 373, Florida Statutes, and these rules.

(12) The construction of seawalls and docks which are regulated by the DER when such construction will not alter or is not part of an existing or proposed project requiring a District permit.

(13) Routine maintenance of a surface water management system; however, maintenance of surface water management systems will be considered in conjunction with the

applications for construction, alteration, or operation.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.406, 373.413, FS. History - Readopted 10-5-74. Amended 10-1-84, 10-1-86 and 3-1-88. Previously numbered 16J-4.05

40D-4.052 Request for Exemption.
(Reserved)

40D-4.053 Conditions for Exemption.

(1) The exemption for phosphate mining and related activities provided in Rule 40D-4.051(9) is subject to the following conditions:

(a) The operator shall certify to the District prior to mining, with existing mines certifying by January 1, 1987, and provide sufficient information to demonstrate that all facilities are and will be designed, constructed and operated to avoid damage to off site property or the public caused by:

1. floodplain development, encroachment or other alteration,

2. retardance, acceleration or diversion of flowing water,

3. reduction of natural water storage areas,

4. excessive discharge or facility failure, or

5. other activities adversely impacting off site water flows or levels.

(b) The operator shall submit to the District a copy of each Annual Report submitted to the Department of Natural Resources (DNR) in accordance with Rule 16C-16.091.

(c) The operator shall submit to the District a copy of each application to the DER for a dredge and fill permit concurrent with its submittal to DER, and fulfill the requirements of Rule 40D-4.053(1)(a) specific to the dredge and fill project prior to issuance by the DER of its proposed agency action.

(d) An existing permitted point of discharge shall not exceed the volume and frequency designated by its DER discharge permit unless a lesser discharge is calculated in accordance with Rule 40D-4.301(2) and submitted to the District to be the maximum allowable discharge.

(e) A new point of discharge shall be designed to the standards of Rule 40D-4.301(2) so that the volume and frequency of discharge specified in its DER discharge permit is equivalent to maximum allowable discharge, which is not to be exceeded.

(f) Natural drainage from off site upgradient areas shall not be interrupted so as to cause damage to off site property or the public, and natural drainage patterns on undisturbed lands shall be maintained to the maximum extent achievable without adversely altering the time, stage, volume and point or manner of discharge or dispersion.

(2) The exemption for phosphate mine reclamation and restoration provided in Rule 40D-4.051(10) is subject to the following conditions:

(a) The operator shall certify to the District, beginning with the first annual or biannual Department of Natural Resources (DNR) reclamation plan required to be filed after January 1, 1987, and provide sufficient information to demonstrate that each reclamation and restoration program is designed, and will be constructed and operated to avoid damage to off site property or the public caused by:

1. floodplain development, encroachment or other alteration,

2. retardance, acceleration or diversion of flowing water,

3. reduction of natural water storage areas,

4. excessive discharge or facility failure, or

5. other actions adversely impacting off site water flows or levels.

(b) The operator shall submit to the District a copy of its approved or pending Conceptual Reclamation Plans or any amendments thereto, under Rule 16C-16.041.

(c) The operator shall submit to the District a copy of its annual or biannual application to the DNR for approval of a reclamation and restoration program required by Rule 16C-16.032, and fulfill the requirements of Rule 40D-4.053(2)(a) specific to the program under consideration prior to issuance by the DNR of its proposed agency action.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.406, 373.413, FS. History - New 10-1-86.

40D-4.054 Alteration of Exempt Projects.

A permit may be required for alteration of a previously exempt surface water management system.

Specific Authority 373.044, 373.113, FS. Law Implemented 373.406, 373.413, FS. History - New 10-1-84.

40D-4.091 Publications Incorporated by Reference.

The following document is hereby published by reference and incorporated into this chapter.

(1) "Basis of Review for Surface Water Management Permit Applications within the Southwest Florida Water Management District, October 27, 1987."

(2) The document listed in Rule 40D-4.091(1) is published by the District and available from the District upon request.

Specific Authority 120.54(8), 373.044, 373.113, 373.171, 373.414, FS. Law Implemented 120.54(8), 373.403, 373.413, 373.414, 373.416, 373.429, FS. History - New 4-2-87. Amended 3-1-88.

40D-4.101 Content of Application.

(1) Applications for permits required by this chapter shall be filed with the District. The applicant shall submit:

(a) The form entitled "Application to the Southwest Florida Water Management District" for a surface water management permit;

(b) The information required in subsection 373.413(2), Florida Statutes;

(c) Drawings, calculations and engineering details sufficient to define the nature, scope, intent and functioning of the work proposed;

(d) The information required in Rule 40D-4.101(2) below.

(2) The following information may be required in support of the application. The applicant should submit as much of the information listed as the complexity of the project and the sensitivity of the area necessitates. A preapplication conference may be requested by the applicant at which time the staff shall identify which of the following information should be submitted and the level of detail required with respect to the specific project reviewed.

(a) Site Information including:

1. Detailed location sketch.

2. Topographic map of the site and adjacent hydrologically related areas, which shall include location and description of bench marks (minimum of one per major water control structure).

3. Overall map of the area showing existing runoff patterns and size, location, topography, and land use of off site

areas which drain through, on to, and from the project.

4. Identification of wet season high water table elevations.

5. If the project is in the known floodway of a stream, or other watercourse, the floodway should be identified and approximate flooding elevations determined. The 100 year flood plain elevations and limits should be identified, if applicable.

6. Description of vegetative cover, wetland areas in and adjacent to the project area, and limits of waters of the state, if activities are proposed for these areas.

7. Recent aerial photography of a scale no smaller than 1" equals 800', encompassing the project area with project boundaries delineated.

8. The construction drawings for the paving, grading, and drainage with special attention to perimeter site grading.

9. Percolation tests, if percolation or exfiltration systems are proposed. Percolation tests shall be representative of design conditions.

10. Complete description of measures to be implemented during the construction period to mitigate adverse quantity and quality impacts off site.

(b) Master Drainage Plan showing:

1. Location of all water bodies with details of size, side slopes, elevations and depths.

2. Location and details of all major water control structures. Control elevations of the control structures must be included along with any seasonal water level regulation schedules.

3. Drainage basin boundaries showing direction of flow, taking into account off site runoff being routed through or around the project.

4. Locations of roads and buildings along with their proposed elevations.

5. Right of way and easement locations for the drainage system including all areas to be reserved for water management purposes.

6. Location and size of internal minor water management facilities.

7. Nearby existing off site water resource facilities which might be affected by the proposed construction or development. The names and addresses of the owners of such facilities should also be submitted.

(c) Drainage Calculations including:

1. Design storms used including depth, duration and distribution.

2. Off site inflows.

3. Stage-storage computations for the project and stage-discharge computations for the outfall structure(s).

4. Acreages and percentage of property proposed as:

a. Impervious surfaces (excluding water bodies),

b. Pervious surfaces (green areas),

c. Lakes, canals, retention areas, etc., and

d. Total acreage of project.

5. Runoff calculations showing discharges, elevations, and volumes retained and/or detained during applicable storm events. Mathematical computations may be required to demonstrate that the proposed development will not significantly alter net storage from the project area for events up to the 100 year frequency.

6. Calculations required for determination of minimum building flood and road elevations.

(d) Legal and Institutional Information including:

1. Identification of the entity responsible for operation and maintenance of the surface water management system.

2. A letter or other evidence of potential acceptance from the public body, if the operation and maintenance entity is to be a public body such as a city or drainage district. Documents verifying the existence of such an organization and its ability to accept operation and maintenance responsibility, if the entity is a homeowners association.

3. Indication of how water and wastewater service will be supplied. Letters of commitment from off site suppliers must be included.

4. Identification of agencies and organizations contacted in connection with the project. Include meeting summaries and/or responses. Give status of local approvals indicating if site plan and/or subdivision approval has been granted, final plats recorded and building or construction permits issued.

5. Present and proposed zoning: Evidence of current density and classification under local government zoning or comprehensive plan must be submitted; include the status under the DRI process, if applicable. The number of proposed dwelling units and/or square feet of commercial area must be supplied. If the project is an approved DRI, then a copy of the final approved development order must be supplied.

6. A copy of a boundary survey and evidence of ownership or control; if the Applicant is a contractual buyer then a copy of the executed contract must be provided.

7. Documentation of legal and physical availability of receiving water system to receive project discharge if such is not evident.

(3) The application must be signed by the owner or his authorized agent, and submitted to the District with four copies of all information required in subsections 40D-4.101(1) and (2). However, for conceptual approval, items (a)8, (a)10, (b)5 and (b)6 of Rule 40D-4.101(2) will not be necessary.

(4) (a) If the applicant desires to dispute the necessity for any information requested on an application form or at a pre-application conference, he may do so at a regularly scheduled meeting of the Governing Board.

(b) An applicant should submit a written request to present evidence regarding such dispute at least 21 days prior to the Governing Board meeting at which he plans to present the evidence.

(c) Upon hearing such evidence, the Governing Board will determine whether the information in dispute is required.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.042, 373.413, FS. History - Readopted 10-5-74, Amended 12-31-74, 6-7-78, 10-1-84 and 3-1-88. Previously numbered 16J-4.06(1), (2).

40D-4.111 Notice of Application Form.

Specific Authority 373.044, 373.133, 373.149, 373.171, FS. Law Implemented 373.413, 373.416, 373.426, FS. History - Readopted 10-5-74, Amended 10-24-76. Previously numbered 16J-4.071. Repealed 10-1-84.

40D-4.121 Notice and Hearing Requirements.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.413, 373.416, 373.426, FS. History - Readopted 10-5-74. Amended 10-21-80. Previously numbered 16J-4.072, 16J-4.074. Repealed 10-1-84.

40D-4.131 Times for Receiving Objections and for Hearing.

Specific Authority 373.044, 373.133, 373.149, 373.171, FS. Law Implemented 373.413, 373.416, 373.426, FS. History - Readopted 10-5-74. Amended 10-21-80. Previously numbered 16J-4.073. Repealed 10-1-84.

40D-4.201 Permit Processing Fee.

A permit processing fee shall be paid to the District at the time a permit application is filed in the amount prescribed in the schedule set forth in Rule 40D-0.201.

Specific Authority 373.044, 373.133, 373.149, 373.171, FS. Law Implemented 373.109, FS. History - Readopted 10-5-74. Previously numbered 16J-4.061.

40D-4.301 Conditions for Issuance of Permits.

(1) In order to obtain an individual construction and operation permit under this chapter, an applicant must give reasonable assurances that the surface water management system:

(a) provides adequate flood protection and drainage,

(b) will not cause adverse water quality and quantity impacts on receiving waters and adjacent lands regulated pursuant to Chapter 373, Florida Statutes,

(c) will not cause discharges which result in any violation, in surface waters of the state, of the applicable standards and criteria of Chapter 17-3, and Rule 17-4.242,

(d) will not cause adverse impacts on surface and groundwater levels and flows,

(e) will not diminish the capability of a lake or other impoundment to fluctuate through the full range established for it in Chapter 40D-8.

(f) will not cause adverse environmental impacts, or adverse impacts to wetlands, fish and wildlife, or other natural resources,

(g) can be effectively operated and maintained,

(h) will not adversely affect public health and safety,

(i) is consistent with the requirements of other public agencies,

(j) will not otherwise be harmful to the water resources within the District,

(k) will not interfere with the legal rights of others as defined in Rule 17-40.07, and

(l) is not against public policy.

(2) The standards and criteria contained in the Basis of Review adopted by reference in Rule 40D-4.091(1) apply to the design and performance of surface water management systems to provide the reasonable assurances required in Rule 40D-4.301(1). Other methods of meeting overall objectives may be proposed and may be considered in determining whether the applicant has provided the reasonable assurances required by Rule 40D-4.301(1).

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.042, 373.403, 373.413, 373.414, 373.416, 373.426, FS. History - Readopted 10-5-74, Amended 12-31-74, 6-7-78, 10-1-84, 6-2-85, and 3-1-88. Previously numbered 16J-4.06(3), (4), (5), (6), (8).

40D-4.321 Duration of Permits.

(1) Unless revoked, extended or otherwise modified, the duration of a surface water management permit issued pursuant to this chapter is:

(a) two years from the date of issuance, for a letter of conceptual approval unless within that period an application for a construction permit is filed for any portion of the project. If the application for a construction

permit is approved and construction is commenced, then the letter of conceptual approval is valid so long as the conceptually permitted phases are under construction consistent with a plan of development submitted to and approved by the District. If construction of the permitted phases is inconsistent with the plan of development then the conceptual approval shall expire.

(b) three years from the date of issuance for a construction permit unless the construction of the permitted surface water management system discharge structure has been completed. If the permitted discharge structure has been completed, then the construction permit is valid for the duration of the project.

(c) perpetual from the date of issuance for an operation permit issued under Chapter 373, Florida Statutes.

(2) Letters of conceptual approval and construction permits expire automatically unless the permittee requests an extension no more than 180 days prior to the expiration date.

(3) An extension may be granted if the permit is consistent with the District's rules in effect at the time the request for extension is filed. Extensions may be granted for up to two years for letters of conceptual approval and up to three years for construction permits.

Specific Authority 373.044, 373.113, FS. Law Implemented 373.413, 373.416, FS. History - New 10-1-84. Amended 3-1-88.

40D-4.331 Modification and Extension of Permits.

An application for modification or extension of a surface water management permit shall be processed in accordance with this rule, unless the permit is revoked, suspended or expired.

(1) Applications to modify or extend a letter of conceptual approval may be made and reviewed:

(a) for an alteration of the design of the surface water management system, in accordance with the same criteria as new applications pursuant to Rules 40D-4.101 and 40D-4.301;

(b) for a project phase, in accordance with Chapter 40D-40 if the project phase satisfies the requirements of Rules 40D-40.112 and 40D-40.302; or

(c) for a project phase which does not satisfy the requirements of paragraph (b), in the manner and using the criteria applicable to the conceptual approval.

(2) Applications to modify or extend construction or operation permits may be made:

(a) by formal application and reviewed using the same criteria as new applications, pursuant to Rules 40D-4.101 and 40D-4.301, or

(b) by letter, provided the requested modification or extension does not:

1. substantially alter the permit authorization,

2. increase the authorized off site discharge,

3. impact the environmental features of the project,

4. decrease the required retention/detention,

5. decrease the required flood control elevations for roads or buildings, or

6. decrease pollution removal efficiency.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.413, 373.416(1), 373.429, FS. History - Readopted 10-5-74. Amended 10-1-84 and 3-1-88. Previously numbered 16J-4.13.

40D-4.341 Revocation of Permits.

(1) The Board may revoke a permit at any time if it determines

that a dam, impoundment, appurtenant work, or works has become a danger to the public health or safety or if its operation has become inconsistent with the objectives of the District or is in violation of any rule or order of the District, or the conditions of the permit.

(2) Revocation proceedings shall be conducted in accordance with the provisions of Section 373.429, Florida Statutes, and Chapter 40D-1.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.429, FS. History - Readopted 10-5-74. Amended 10-1-84. Previously numbered 16J-4.13.

40D-4.351 Transfer of Permits.

(1) A permittee must notify the District within 30 days of the sale or conveyance of a surface water management system or the land on which the system is located. The District will transfer the surface water management operation and maintenance permit provided the land use remains the same. A surface water management permit to construct or alter a system will not be transferred if the permit is over three years old and the permitted project discharge structure or equivalent has not been constructed.

(2) After the completion of construction of the surface water management system and approval of the facilities by the District, the District will transfer the operational phase of the permit to the accepted responsible operational entity.

Specific Authority 373.044, 373.113, FS. Law Implemented 373.413, 373.416(2), FS. History - New 10-1-84.

40D-4.381 Limiting Conditions.

(1) The Board may impose on any permit granted under this chapter such reasonable conditions as are necessary to assure that the permitted operation will be consistent with the overall objectives of the District and will not be harmful to the water resources of the District.

(2) In addition to project specific special conditions, the following standard limiting conditions shall be attached to all permits issued pursuant to this chapter unless waived or modified by the Board.

(a) The permittee shall perform the construction authorized in a manner so as to minimize any adverse impact of the system on fish, wildlife, natural environmental values, and water quality. The permittee shall institute necessary measures during the construction period, including full compaction of any fill material placed around newly installed structures, to reduce erosion, turbidity, nutrient loading and sedimentation in the receiving waters.

(b) Water quality data for the water discharged from the permittee's property or into surface waters of the state shall be submitted to the District as required. Parameters to be monitored may include those listed in Chapter 17-3. Analyses shall be performed according to procedures outlined in the current edition of Standard Methods for the Examination of Water and Wastewater by American Public Health Association or Methods for Chemical Analyses of Water and Wastes by the U. S. Environmental Protection Agency. If water quality data are required, the permittee shall provide data as required on volumes of water discharged, including total volume discharged during the days of sampling and total monthly discharges from the property or into surface waters of the state.

(c) The permittee shall comply with all applicable local subdivision regulations and other local requirements. In addition the permittee shall obtain all necessary

Federal, State, local and special district authorizations prior to the start of any construction or alteration of works authorized by this permit.

(d) The operation phase of this permit shall not become effective until the owner or his authorized agent certifies that all facilities have been constructed in accordance with the design permitted by the District. Within 30 days after completion of construction of the surface water management system, the permittee shall submit the certification and notify the District that the facilities are complete. Upon completion of the surface water management system, the permittee shall request transfer of the permit to the responsible entity approved by the District. The District may inspect the system and require remedial measures as a condition of transfer of the permit.

(e) All roads shall be set at or above elevations required by the applicable local government flood criteria.

(f) All building floors shall be set at or above elevations acceptable to the applicable local government.

(g) Off site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.

(h) No construction authorized herein shall commence until a responsible entity acceptable to the District has been established and has agreed to operate and maintain the system. The entity must be provided with sufficient ownership so that it has control over all water management facilities authorized herein. Upon receipt of written evidence of the satisfaction of this condition, the District will issue an authorization to commence construction.

(i) The permit does not convey to the permittee any property right nor any rights or privileges other than those specified in the permit and Chapter 40D-4.

(j) The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, operation, maintenance or use of any facility authorized by the permit.

(k) This permit is issued based on the applicant's submitted information which reasonably demonstrates that adverse off site water resource related impacts will not be caused by the completed permit activity. It is also the responsibility of the permittee to insure that adverse off site water resource related impacts do not occur during construction.

(l) Prior to dewatering, plans shall be submitted to the District for approval. Information shall include as a minimum pump sizes, locations and hours of operation for each pump. If off site discharge is proposed, or off site adverse impacts are evident, an individual water use permit may be required. The permittee is cautioned that several months may be required for consideration of the water use permit application. Temporary dewatering during construction, i.e., well pointing, ditching, etc., that will not affect adjacent wetlands or off site lands is exempt from this requirement.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.042, 373.403, 373.409, 373.413, 373.416, 373.426, FS. History - Readopted 10-5-74, Amended 12-31-74, 6-7-78, 10-1-84 and 3-1-88. Previously numbered 16J-4.06(7), 16J-4.11, 16J-4.10(3).

40D-4.401 Identification Tags.

Specific Authority 373.044, 373.133, 373.149, 373.171, FS. Law Implemented 373.413, 373.416, 373.426, FS. History - Readopted 10-5-74. Previously numbered 16J-4.062. Repealed 10-1-84.

40D-4.411 Completion Report.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.419, FS. History - Readopted 10-5-74. Previously numbered 16J-4.08. Repealed 10-1-84.

40D-4.451 Emergency Authorization.

(1) Permission to begin construction of works prior to the issuance of a permit may be applied for, in writing, when the emergency conditions justify. However, no such permission shall be granted unless the construction of the works is already under consideration for a permit under Rule 40D-4.041. A serious set of unforeseen or unforeseeable circumstances must exist to create an emergency. Mere carelessness or lack of planning on the part of the applicant shall not be sufficient grounds to warrant the granting of emergency authorization.

(2) The Executive Director may grant emergency authorization at his discretion. The emergency authorization shall be presented to the Board for concurrence at its next meeting. The failure to receive the Board's concurrence shall invalidate the emergency authorization.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.413, FS. History - Readopted 10-5-74, Amended 10-24-76, 10-1-84. Previously numbered 16J-4.16.

40D-4.461 Inspection.

Inspection of permitted systems shall be conducted in accordance with Section 373.423, Florida Statutes.

Specific Authority 373.044, 373.133, 373.149, 373.171, FS. Law Implemented 373.423, FS. History - Readopted 10-5-74. Amended 10-1-84. Previously numbered 16J-4.09.

40D-4.471 Abatement.

Abatement proceedings shall be conducted in accordance with Section 373.433, Florida Statutes.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.433, FS. History - Readopted 10-5-74. Amended 10-1-84. Previously numbered 16J-4.14.

40D-4.481 Remedial and Emergency Measures.

(1) Remedial measures shall be processed in accordance with the provisions of Section 373.436, Florida Statutes.

(2) Emergency measures shall be employed in accordance with the provisions of Section 373.439, Florida Statutes.

Specific Authority 373.044, 373.113, 373.149, 373.171, FS. Law Implemented 373.436, 373.439, FS. History - Readopted 10-5-74. Amended 10-1-84. Previously numbered 16J-4.15, 16J-4.17.

III. Chapter 40D-40

This rule sets forth the requirements for general surface water management permits. The applicable, specific design criteria set forth in Part B of this manual must still be met but the processing time for permits will be shorter than under Chapter 40D-4.

Noticed general permits provide a means to address storm water run-off for projects under 10 acres that do not include wetlands and otherwise qualify for these permits. Projects are not reviewed for their water quantity discharge impacts.

General permits are issued for projects 10 to 40 acres in size that meet the rule requirements. Both the water quantity and water quality aspects of the project must be addressed in the design. The following types of projects/systems may qualify for a general permit under this rule:

1. All works within the District which serve projects with less than 40 acres total land area, which are located on uplands, and which are within local entities that have adopted subdivision regulations, are permitted by this rule subject to conditions.

2. All works within the District which serve public highway projects constructed or funded by state, federal or local government, are permitted by this rule subject to conditions and exceptions. The exceptions specified in the rule apply to projects which are likely to have an impact on the water resources of the District.

3. An individual phase of a project which is less than 40 acres in size and is in conformance with a Conceptual Approval which has been issued.

The Application Form; the name and address of the proposed operation entity; and the construction drawings for the paving, grading and drainage with supporting calculations and other appropriate documents must be submitted to be permitted under this rule.

RULES OF THE
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
CHAPTER 40D-40
GENERAL SURFACE WATER MANAGEMENT PERMITS

40D-40.011 Policy and Purpose.

The rules in this chapter grant general permits for certain specified surface water management systems which have been determined to be not harmful to the water resources of the District and consistent with the objectives of the District. The purpose of this chapter is to set forth the requirements for qualifying for a noticed general permit or a general permit and the conditions under which they may be exercised. Non-exempt surface water management systems not qualifying for a noticed general permit or a general permit under this chapter are required to obtain individual permits. The District reserves the right to require an individual permit for any surface water management system which does not comply with the provisions of this chapter or which is harmful to the water resources of the District, interferes with the legal rights of others, is inconsistent with the overall objectives of the District, or is otherwise contrary to the public interest.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.103(1), 373.413(1), 373.416, 373.419, 373.429, FS. History - New 10-1-84. Amended 3-1-88.

40D-40.021 Definitions.

As used in this chapter:

(1) "Public highway project" means a road and associated facilities located within a right of way dedicated to the public for highway purposes, which are constructed, altered, operated, maintained or funded by the United States, the State of Florida, a county, or municipality.

(2) The terms have the same meaning as defined in Rule 40D-4.021.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.413, 373.416, 373.419, 403.031(3), FS. History - New 10-1-84. Amended 3-1-88.

40D-40.031 Implementation, Effective Date and Applicability.

(1) This rule specifies the effective dates for the general

surface water management permits granted in this chapter.

(2) If the surface water management system meets the conditions of subsections 40D-40.302(1) through (4), the effective date is October 1, 1984.

(3) Amendments to these rules adopted October 27, 1987, including the Basis of Review, are effective March 1, 1988, and apply to permit applications filed on or after March 1, 1988.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.416, 373.419, FS. History - New 10-1-84. Amended 3-1-88.

40D-40.041 Noticed General Permit for Construction, Alteration or Operation of Surface Water Management Systems.

(1) All persons constructing, altering, operating or maintaining a surface water management system who meet the conditions of Rule 40D-40.301, are authorized to construct, alter, operate or maintain a surface water management system subject to the requirements of this chapter. These permits require compliance with state water quality standards and criteria, Chapter 17-3 and Rule 17-4.242.

(2) No construction, alteration, operation or maintenance shall be commenced until the permittee receives a written authorization to proceed from the District.

(3) The District shall act on the application within 60 days from the receipt of a complete application and all requested additional information.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 120.60(2), 373.413, 373.416, FS. History - New 3-1-88.

40D-40.042 General Permit for Construction, Alteration or Operation of Surface Water Management Systems.

(1) All persons constructing, altering, operating or maintaining a surface water management system who meet the conditions specified in Rule 40D-40.302, are authorized to construct, alter, operate or maintain the surface water management system subject to the requirements of this chapter.

(2) All persons constructing, altering, operating or maintaining surface water management systems which are discrete and independent phases of a project which has received conceptual approval, and which meet the criteria of the conceptual approval and otherwise satisfy the requirements of Rule 40D-40.302, are authorized to construct, alter, operate or maintain the surface water management system subject to the requirements of the conceptual approval and this chapter.

(3) No construction, alteration, operation or maintenance shall be commenced until the permittee receives a written authorization to proceed from the District.

(4) The District shall act on the application within 60 days from the receipt of a complete application and all requested additional information.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 120.60(2), 373.413, 373.414, 373.416, 373.419, FS. History - New 10-1-84. Amended 3-1-88.

40D-40.111 Requests for Noticed General Permits.

(1) Requests for noticed general permits shall be filed with the District. The request shall contain:

(a) Form entitled "Request for Noticed General Permit Pursuant to Rule 40D-40.111, Surface Water Management."

(b) The construction drawings for the paving, drainage and grading of the area showing:

1. the total land area;
2. the total area of impervious surface;
3. the location of any on site wetlands;
4. the location and details of the surface water management system including but not limited to any lakes, culverts, pipes, exfiltration trenches, discharge structures, pumps and related facilities;
5. the surface water management system design plans and calculations, signed and sealed by a Florida registered Professional Engineer, if required by Chapter 471, Florida Statutes.

(c) A written statement of ownership of the property which shall include:

1. the legal description, and
2. a statement that the total contiguous property owned or controlled by the applicant does not exceed ten acres. This does not apply to requests required by Rule 40D-4.041(4).

Specific Authority: 373.044, 373.113, 373.118, FS. Law Implemented 373.413, 373.416, 373.419, FS. History - New 3-1-88.

40D-40.112 Content of Application for General Permits.

Prior to the commencement of any construction or alteration of a surface water management system authorized in Rule 40D-40.042, the applicant shall file with the District the form entitled "Application to the Southwest Florida Water Management District." The Application shall include the following information:

(1) the applicant's name and address;

(2) a description of the proposed project, including:

(a) location,

(b) total acreage,

(c) number of dwelling units or square feet of commercial area,

(d) evidence of present and/or proposed zoning and

(e) proposed minimum road and flood elevations.

(3) a description of the surface water management system to be constructed or altered including:

(a) acreage of impervious cover, and

(b) acreage of water management system;

(4) a statement of facts which show why the proposed surface water management system qualifies for a general permit;

(5) a statement that all necessary Federal, State, local and special district criteria have been met and that the project is acceptable to the pertinent local jurisdiction as being in the public interest;

(6) the date on which construction or alteration is expected to commence;

(7) a copy of the paving, grading and drainage plans,

(8) the name and address of the proposed operational entity, and;

(9) such other information as is reasonably necessary for the staff to determine that the surface water management system meets the conditions of this chapter including any information required in Rule 40D-4.101.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.413, 373.414, 373.416, 373.419, FS. History - New 10-1-84. Amended 3-1-88.

40D-40.141 Request for Additional Information.

(1) If the information provided is not sufficient to determine whether the construction, alteration, operation or maintenance of the surface water management system qualifies for a noticed general permit under Rule 40D-40.301 or for

a general permit under Rule 40D-40.302, or meets the conditions in Rule 40D-40.381, the District may request the permittee to submit additional information, including any information required in Rule 40D-4.101.

(2) If additional information is required, it shall be requested within 30 days of receipt of the Application.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 120.60(2), 373.413, 373.414, 373.416, 373.419, FS. History - New 10-1-84. Amended 3-1-88.

40D-40.301 Conditions for Issuance of Noticed General Permits.

(1) To obtain a noticed general permit, an applicant must provide reasonable assurance that the following conditions are met and certify that:

(a) The total land area does not equal or exceed 10 acres;

(b) The area of impervious surface will not equal or exceed two acres;

(c) The activities will not be conducted in isolated wetlands regulated under Chapter 373, Florida Statutes, and these rules, or in wetlands regulated under Chapter 403, Florida Statutes;

(d) The activities will not be conducted in existing lakes, streams or other water courses;

(e) The activities will not utilize pumps for storm water management;

(f) The activities will not utilize storm drainage facilities larger than one 24-inch diameter pipe, or its equivalent. Exceptions to this are projects of the Florida Department of Transportation (FDOT) that will not increase the size or hydraulic capacity of any existing drainage facility.

(g) Discharges from the site will meet state water quality standards and criteria, as set forth in Chapter 17-3 and Rule 17-4.242;

(h) The proposed building floors will be above the 100 year flood elevation;

(i) The activities can otherwise be expected to have acceptable or insignificant water resources impacts;

(j) The surface water management system can be effectively maintained; and

(k) The surface water management system will meet the applicable water quality criteria in Section 3.2.2 of the Basis of Review described in Rule 40D-4.091(1).

(2) Applicants required to obtain a permit by subsection 40D-4.041(4) may obtain a noticed general permit if the applicant provides reasonable assurance and certifies that the conditions in paragraphs 40D-40.301(1)(j) and (k) are met.

(3) The FDOT may satisfy the conditions in paragraphs 40D-40.301(1)(g) and (k) above for projects which otherwise qualify for noticed general permits by certifying that the DER and the Corps of Engineers have authorized the project.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.413, 373.414, 373.416, FS. History - New 3-1-88.

40D-40.302 Conditions for Issuance of General Permits.

In order to qualify for a general permit under this chapter, the applicant must give reasonable assurances that the surface water management system meets all conditions of subsection 40D-40.302(1) and all thresholds and conditions of at least one other subsection.

(1) General Conditions.

(a) The surface water management system must meet the criteria specified in Rule 40D-4.301 and applicable local requirements.

(b) The permittee must have obtained a Works of the District permit or other approval from the District if the permittee proposes to connect to, place structures in or across, or otherwise make use of works owned by the District.

(2) Thresholds and Additional Conditions.

(a) The project must have less than 40 acres total land area.

(b) The project and surface water management system must have been approved by the appropriate unit of local government subsequent to the effective date of this rule.

(3) Additional Conditions for Surface Water Management Systems Associated with Public Highway Projects.

(a) The public highway project must be located within a right of way dedicated to the public for highway purposes.

(b) The public highway project must not:

1. Drain lands outside the jurisdiction of the constructing or funding public body;

2. Lower or have the potential for lowering the dry season groundwater table outside the project's design drainage area; and

3. Interfere with natural drainage patterns or flows.

(4) Additional Conditions for Phased Construction under Conceptual Approvals.

(a) The project phase must comply with the requirements of the conceptual approval.

(b) The project phase must be less than 40 acres and meet the conditions of subsection 40D-40.302(1) and (2)(b).

(c) The Conceptual Approval must have been issued subsequent to October 1, 1984.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.413, 373.414, 373.416, 373.419, FS. History -New 10-1-84. Amended 3-1-88.

40D-40.321 Duration of Permits.

Unless revoked or otherwise modified, the duration of a noticed general permit authorized in Rule 40D-40.041 or a general permit authorized in Rule 40D-40.042 is:

(1) 3 years, for a construction permit unless the construction of the permitted project discharge structure or equivalent has been completed. If the permitted discharge structure or equivalent has been completed, then the construction permit is valid for the duration of the project construction.

(2) perpetual, for an operation permit issued under Chapter 373, Florida Statutes.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.413, 373.416, 373.419(2), FS. History - New 10-1-84. Amended 3-1-88.

40D-40.331 Modification of Permits.

A request for modification of a noticed general permit or a general surface water management permit shall be made in accordance with this rule, unless the permits are otherwise revoked, suspended or expired. Requests to modify permits shall be made:

(1) in accordance with Rules 40D-40.041, 40D-40.111 and 40D-40.301 for noticed general permits; or

(2) in accordance with Rules 40D-40.042, 40D-40.112 and 40D-40.302 for general permits; or

(3) by letter provided the requested modification does not exceed the conditions of subsection 40D-4.331(2)(b).

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.413, 373.416(1), 373.429, FS. History - New 10-1-84. Amended 3-1-88.

40D-40.341 Revocation of Permits.

Violations of this chapter may result in the revocation or suspension of the authorization in whole or part in accordance with the provisions of Section 373.429, and Chapter 120, Florida Statutes, and Chapter 40D-1.

Specific Authority 373.044, 373.113, FS. Law Implemented 120.60(6), 373.429, FS. History - New 10-1-84.

40D-40.351 Transfer of Permits.

Transfer of permits shall be made in accordance with Rule 40D-4.351.

Specific Authority 373.044, 373.113, FS. Law Implemented 373.413, 373.416(2), FS. History - New 10-1-84.

40D-40.381 Limiting Conditions.

The noticed general and general permits authorized in this chapter shall be subject to the following limiting conditions:

(1) The limiting conditions of Rule 40D-4.381 shall apply.

(2) The noticed general and general permit shall be subject to other reasonable conditions as are necessary to assure that the permitted system will not be inconsistent with the overall objectives of the District and will not be harmful to the water resources of the District.

Specific Authority 373.044, 373.113, 373.118, FS. Law Implemented 373.117, 373.413, 373.414, 373.416, 373.419, FS. History - New 10-1-84. Amended 3-1-88.

Appendix D.

Tampa Bay Regional Planning Council

Policies for Stormwater Management

from Future of the Region:
A Comprehensive Regional Policy Plan
for the Tampa Bay Region - 1987

8.2. REGIONAL GOAL:
BY 1995, CONSERVATION PRACTICES WILL BE IDENTIFIED AND UTILIZED TO REDUCE WATER CONSUMPTION THROUGHOUT THE INDUSTRIAL, COMMERCIAL, AGRICULTURAL, AND RESIDENTIAL SECTORS.

8.2.1 Policy:
A comprehensive regional, long-term water conservation program shall be developed. Strategies consistent with this regional program shall be developed and implemented on the local level.

8.2.2 Policy:
Clarification of the responsibilities and representations within the various agencies involved in water supply protection and distribution shall be made available to the public. Periodic examination of equitable representation and participation on such agencies' governing boards shall be conducted.

8.5. REGIONAL GOAL:
BY 1991, THE REGION WILL INCREASE THE PROTECTION OF MAJOR PUBLIC WATER SUPPLIES AND WELLFIELDS.

8.5.1 Policy:
Prime groundwater recharge areas and cones of influence of existing and future major public water supplies and well fields shall be identified and mapped.

8.5.2 Policy:
Regulations which serve to provide special protection to these recharge areas shall be implemented at the state, regional and local levels.

8.5.3 Policy:
Activities which could conceivably breach the confining unit to the Floridan Aquifer shall be strictly regulated.

8.6. REGIONAL GOAL:
BY 1990, INCREASED COORDINATION BETWEEN GOVERNMENTAL AGENCIES WILL REDUCE HUMAN-INDUCED CONTAMINATION TO SURFACE AND GROUNDWATER RESOURCES.

8.6.1 Policy:
Appropriate governmental agencies shall be required to develop plans to prevent, abate, and control surface and groundwater pollution.

8.6.3 Policy:
Programs to increase coordination between the various agencies charged with the protection and conservation of the region's water resources shall be developed.

8.7. REGIONAL GOAL:
BY 1991, NEW DEVELOPMENTS IN THE REGION WILL BE REQUIRED TO USE THE BEST MANAGEMENT PRACTICES (BMPs) AND/OR PROCEDURES TO REDUCE POLLUTANTS IN STORMWATER RUNOFF.

8.7.1 Policy:
Programs to ensure water reclamation and reuse alternatives for wastewater and stormwater disposal to surface water bodies shall be developed.

8.7.2 Policy:
Whenever environmental or health concerns warrant, treatment facilities shall be required to utilize Best Management Practices and technologies.

8.8. REGIONAL GOAL:
BY 1995, EXISTING DEVELOPMENTS WILL BE REQUIRED TO MAKE MEASURABLE PROGRESS TOWARD MEETING STORMWATER STANDARDS.

8.8.1 Policy:
Local governments should upgrade or retrofit drainage systems in urbanized areas to include stormwater treatment for water quality.

8.8.2 Policy:
If onsite detention is not feasible, some payment in lieu of detention shall be made to local governments for construction of a regional stormwater facility within that drainage basin.

8.8.3 Policy:
Redevelopment projects, irrespective of previous impervious cover, shall provide or support stormwater improvements within the affected drainage basin.

8.8.4 Policy:
Agricultural runoff shall be handled with Best Management Practices to minimize its impact upon receiving water

8.9. REGIONAL GOAL:
BY 1995, THERE SHALL BE AN INCREASE IN THE EFFECTIVENESS OF PROGRAMS PROTECTING OR ENHANCING THE ECOLOGICAL FUNCTION OF NATURAL SYSTEMS (AQUATIC, WETLAND AND TERRESTRIAL SYSTEMS).

8.9.1 Policy:
Programs shall be developed at the regional and local levels to identify, protect and conserve the natural character and function of area lakes, streams, estuaries, wetlands, floodplain areas, and upland areas.

8.9.2 Policy:
Local government comprehensive plans shall incorporate the following:

a. adoption of criteria for work in lake, riverine and wetland systems which will protect water quality, wildlife habitat and natural hydrologic functioning of these areas;
b. conservation of valuable upland habitat and wetland systems;
c. preservation of habitat for endangered and threatened species;
d. establishment of ecological minimum flow criteria and hydroperiod for surface waters;
e. utilization of biological treatment methods and natural areas, such as wetlands, for stormwater treatment in areas of development/redevelopment to the maximum feasible extent.

8.9.3 Policy:
In regionally significant development proposals, developers shall assess the cumulative impacts of such activities as dredge and fill, waste disposal, and construction on the health of the natural systems.

8.10. REGIONAL GOAL:
BY 1991, LAND USE PRACTICES WILL REDUCE THE DISRUPTION OF NATURAL FLOODPLAIN FUNCTIONS.

8.10.1 Policy:
Regulations should be developed to promote appropriate land use practices compatible with floodplain areas and provide for performance standards for these land uses.

9.3. REGIONAL GOAL:
BY 1995, AQUATIC PRESERVES IN THE TAMPA BAY REGION WILL BE MORE PRODUCTIVE THAN 1985 LEVELS AND HAVE A SIGNIFICANT IMPROVEMENT IN QUALITY OVER 1985 MEASUREMENTS.

9.3.1 Policy:
Designated aquatic preserves shall be protected from development that would significantly alter their character. The creation, preservation and restoration of these preserves should be required.

9.3.2 Policy:
Geographic gaps in the boundaries of the Tampa Bay aquatic preserves which result in ecological and political inconsistencies for management should be eliminated.

9.3.3 Policy:
Buffer zones or other appropriate protection shall be established between pristine aquatic preserves and adjacent upland uses to prevent degradation of water quality, shoreline and marine habitats.

9.4. REGIONAL GOAL:
BY 1991, ALL MARINE RESOURCES WILL BE PROTECTED FROM CONTAMINATION FROM HUMAN-INDUCED PROCESSES.

9.4.7 Policy:
Require through local land development regulations the highest level of cost-effective control and treatment for point and nonpoint effluent discharges to estuarine and near shore coastal waters.

9.6 REGIONAL GOAL:
BY 1990, COASTAL AREAS WILL BE PROTECTED BY LOCAL GOVERNMENT CONTROLS AND OTHER BUILDING REGULATIONS THAT WILL ENHANCE THE CHARACTER AND FUNCTION OF BARRIER ISLANDS AND OTHER ENVIRONMENTALLY SENSITIVE COASTAL AREAS.

9.6.1 Policy:
Land and water uses shall be compatible with the protection of sensitive coastal resources.

9.6.2 Policy:
The use of government funds to subsidize development should be prohibited in high-hazard coastal areas.

10.2 REGIONAL GOAL:
BY 1991, LOCAL GOVERNMENTS WILL HAVE WRITTEN POLICIES, PROGRAMS AND/OR ORDINANCES THAT ADDRESS THE PROTECTION OF ISOLATED WETLANDS.

10.2.1 Policy:
A minimum identified buffer or other appropriate protection shall be maintained around acknowledged isolated wetlands where development activities or other activities may disturb the wetlands or associated wildlife.

10.2.2 Policy:
The hydrologic continuity and water quality of identified isolated wetlands shall be protected. Development activities or other land disturbances in the drainage area of

the wetlands shall minimize alterations to the surface or subsurface flow of water into and from the wetland and shall not cause impairment of the water quality or the plant and wildlife habitat value of the wetland.

10.2.3 Policy:
Water users, such as agriculture and mining, shall prepare acceptable mitigation plans to minimize unavoidable impacts to nearby wetlands.

10.2.4 Policy:
Mitigation measures shall be developed to provide water quality benefits and plant and animal habitat equivalent to the wetland destroyed or altered. Newly created wetlands should include at least 1:1 mitigation using the same type or more productive vegetation with at least an 80-85 percent natural cover rate, over a 2 to 5 year period.

10.4. REGIONAL GOAL:
BY 1991, DEVELOPMENT IN 100 YEAR FLOODPLAINS SHOULD BE STRICTLY REGULATED.

10.4.1 Policy:
New channelization shall be permitted only as a last resort in providing flood protection to existing development.

10.4.2 Policy:
New development shall not be located in river floodways (the area of highest velocity during flow), except in cases of overriding public interest.

10.4.3 Policy:
New development permitted in the flood fringe (the area of the floodplain outside the floodway) shall be required to meet flood hazard construction requirements.

10.4.4 Policy:
Channelization solely to create new lands for development shall be prohibited.

10.4.5 Policy:
In cases where new channelization for flood protection has been fully analyzed and justified, such projects shall be carried out with maximum protection to fish and wildlife habitat.

10.5 REGIONAL GOAL:
BY 1991, NEW OR REBUILT DEVELOPMENT WITHIN THE 25-YEAR FLOODPLAIN WILL NOT CONTRIBUTE ADVERSE WATER QUALITY IMPACTS FROM STORMWATER RUNOFF.

10.5.1 Policy:
Local agencies shall encourage study and research to establish and map all established floodplain areas.

10.5.2 Policy:
Development along all river floodplains shall be low density with adequate setbacks to maintain existing areas of natural habitat.

10.5.3 Policy:
Floodplain management shall be required to prevent erosion, retard runoff and protect the natural functions and values of the floodplain while promoting public usage.

10.8 REGIONAL GOAL:
BY 1991, THERE WILL BE MARKED CHANGES IN LAND REARRANGEMENT AND VEGETATION CLEARING PRACTICES THAT DEGRADE THE REGION'S NATURAL DRAINAGE AND PERCOLATION PATTERNS.

10.8.1 Policy:
The use of buffer zones of natural vegetation between agricultural lands and water bodies shall be required.

10.8.3 Policy:
Unique land forms and geological features shall be preserved.

10.8.4 Policy:
New development shall avoid extensive alteration of existing topographic features.

10.8.5 Policy:
The barrier islands shall be protected from development that impedes evacuation, geological function, and environmental character and function of the islands and immediate vicinity.

10.8.6 Policy:
Sediment control plans shall be required for all harvests in the region. The sediment control operations shall be implemented in accordance with specifications set out by the Soil and Water Conservation District and enforced by the Department of Natural Resources or the local jurisdiction.

13.6 REGIONAL GOAL:
BY 1995, GROUNDWATER CONTAMINATION DUE TO INAPPROPRIATELY LOCATED OR IMPROPERLY USED SEPTIC TANKS SHALL BE ELIMINATED.

13.6.2 Policy:
Permitting process criteria for septic tanks and their fields shall take into consideration adverse impacts on water quality and aquatic resources.

13.6.4 Policy:
An identification and location study of septic tanks associated with all commercial and industrial activities shall be conducted. An evaluation should be conducted concerning potential adverse effects on groundwater resources, water supply wells, and ground water recharge potential.

13.7 REGIONAL GOAL:
BY 1995, GROUNDWATER CONTAMINATION DUE TO INAPPROPRIATELY LOCATED SPRAY IRRIGATION SITES SHALL BE ELIMINATED.

13.7.1 Policy:
The selection of spray irrigation sites shall continue to be based on a complete analysis of the treated effluent and a detailed hydrogeological analysis of the site to determine the potential for groundwater contamination from any hazardous waste or other pollutants.

22.1. REGIONAL GOAL:
BY 1991, THE TAMPA BAY REGION SHALL BALANCE THE NEEDS OF AGRICULTURAL AND NONAGRICULTURAL LAND USES.

22.1.1 Policy:
The preservation and utilization of agriculture land for agriculture uses, and the preservation of rural historic resources, are encouraged.

22.1.4 Policy:
The use of buffer zones of natural vegetation between agricultural lands and water bodies to maintain good water quality is encouraged.

22.3. REGIONAL GOAL:
BY 1995, SOIL EROSION SHOULD BE REDUCED.

22.3.1 Policy:
Control measures to abate erosion shall be incorporated into mining, construction, agricultural and development activities.

22.3.2 Policy:
The conservation of soil resources is encouraged to maintain the economic value of land for agricultural pursuits, and to prevent sedimentation of state waters.

Appendix E.

Environmental Protection Commission of Hillsborough County

Stormwater Requirements

Prior to Construction Plan approval, the following must be shown on the plan or data must be submitted for review:

1. All items as required for Preliminary Plat approval.

2. For every one of the wetlands or the conservation/preservation areas affected by the proposed development, calculate the pre-and post-development runoff volume discharged into the wetland due to a 3 year-24 hour, and a one inch storm event.
/ one hour

3. For every one of the wetlands or the conservation areas within the property, indicate the pre-development watershed area contributing surface runoff to the wetland or the conservation area; also indicate the type of ground coverage, the type of soil, and topographic contours of the proposed development site.

4. Normal water level, design low water, design high water and top of bank should be shown for all lakes, and detention or retention ponds.

5. If a body of water is used as a detention or retention pond, indicate the stages corresponding to the first 1/2" of runoff.

6. If a man-made lake or detention pond discharges into a conservation area, indicate the weir elevation of the weir through which water is discharged. Indicate elevations of control structures for water outflows from conservation areas, if such structures are being built.

7. Drainage calculations must be submitted to EPC.

8. Data and calculations for determining the maintenance of the natural hydroperiod of each wetland. This is needed in order to evaluate and ensure maintenance of wetland amenities.

9. Detailed mitigation plans which include cross-sections showing slopes, depth of excavation, desired water levels, types of plants to be used and spacing. Total acreage of wetlands destroyed and mitigated for. Time tables for starting and completing mitigation work. Monitoring schedule and reports and statement that 85% survival will be attained with replanting on an annual basis if necessary. A completed "Application for Mitigation Plan Approval". Hillsborough County Land Alteration and Landscape Section approval sign-off for potential mitigation sites.

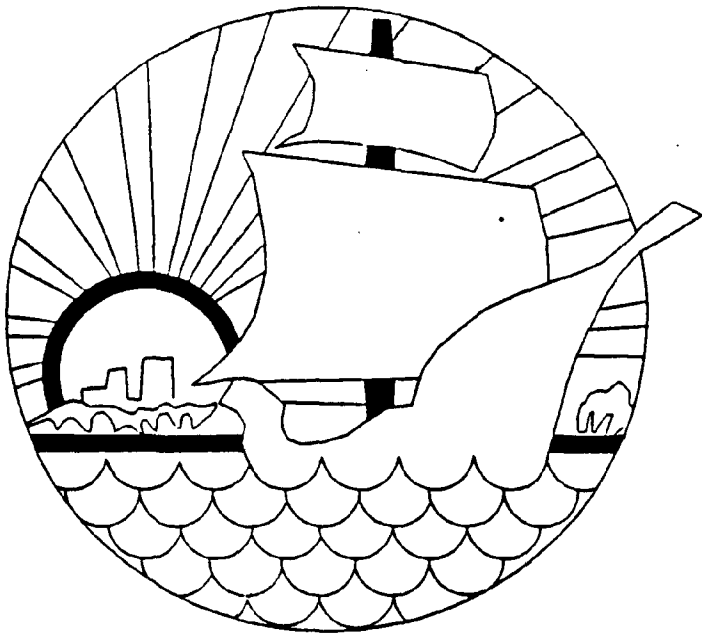
10. Method of erosion control to be used (i.e. hay bales, screens, etc.) and their placement (i.e along 30' setback, conservation line, etc.). (To protect water quality and wetland habitat).

11. Mitigation sites labelled as Conservation or Preservation areas as per EPC wetland Rule Chapter 1-11.

Appendix F.

Manatee County Comprehensive Plan

Stormwater Requirements



THE MANATEE COUNTY COMPREHENSIVE PLAN

ADOPTED BY
THE BOARD OF COUNTY COMMISSIONERS
OF
MANATEE COUNTY, FLORIDA

MAY 15, 1989

PREPARED BY

Florida Land Design & Engineering, Inc.

One North Dale Mabry
Suite 700
Tampa, Florida 33609

1401 Manatee Avenue West
Suite 1120
Bradenton, Florida 34205

100 South Orange Avenue
Suite 700
Orlando, Florida 32801

For information: Manatee County Planning and Zoning Department
Telephone (813) 748-4501

THE
MANATEE COUNTY
COMPREHENSIVE PLAN

CHAPTER ELEVEN

PUBLIC FACILITIES ELEMENT

PART III

DRAINAGE AND GROUNDWATER RECHARGE SUB-ELEMENT

GOAL: 11.3 **REDUCE FLOODING AND IMPROVE SURFACE WATER QUALITY IN MANATEE COUNTY.**

Objective: 11.3.1 **LEVEL OF SERVICE STANDARDS AND CONCURRENCY: Meet following Level of Service Standards for planning capital improvements and reviewing applications for development order approval, where the issuance of a Certificate of Level of Service Compliance is required.**

Policies: It shall be the policy of Manatee County to:

11.3.1.1 Require the rate of stormwater discharge from new development to be equal to, or less than, the rate of discharge that existed prior to development, based on a 25-year frequency - 24-hour duration storm event.

11.3.1.2 Design trunk storm sewers and major drainage channels to accommodate the stormwater runoff resulting from a design storm of 25-year frequency - 24 hour duration.

11.3.1.3 Design internal, or on-site, drainage facilities on any project to accommodate the stormwater runoff resulting from a design storm of 10-year frequency - critical duration based on the project site's time of concentration, and to meet all other applicable state and local regulations.

11.3.1.4 Require, within potable water supply watersheds designated by the WO-M and WO-E overlays on the Future Land Use Map, that all projects meet Florida Department of Environmental Regulation Stormwater System design standards for discharge into Outstanding Florida Waters. Waiver, by the Board of County Commissioners, of this policy may be considered for a project subject to the use of a stormwater management system which provides for equivalent levels of stormwater treatment.

Equivalent stormwater treatment shall utilize a combination of treatment practices so as to ensure that the construction, alteration, or operation of the system will not discharge, emit, or cause

pollution in contravention of applicable state Outstanding Florida Water quality standards as set forth in Chapter 17-3 and Section 17-4.242, Florida Administrative Code. Acceptable treatment practices may include:

- retreatment/pretreatment detention systems designed to provide detention times that exceed detention times normally required, and providing repetitive water quality treatment. These systems include those providing pretreatment/ retreatment using natural or artificial wetland systems, without adverse impact on the bio-character of the wetlands.

- Off-line treatment systems using retention/percolation of at least the first three-quarter inch (3/4") of stormwater runoff, without release of pollutants out of the retention area.

- Stormwater system designs that significantly increase the time of concentration (i.e., time taken for stormwater runoff to reach the detention/retention areas), or increase the percentage of post-treatment discharge to greenspace suited for additional water quality treatment (e.g., swales or buffer areas). Increased times of concentration may, for example, be achieved through the use of swales in major drainageways to convey stormwater to detention/retention areas.

- Mechanical treatment systems to reduce the amount of directly connected impervious surface (e.g., limits on downspout locations, trench drains).

- Other systems which can be demonstrated to provide additional stormwater treatment equivalent (in effect) to treatment criteria associated with discharge into Outstanding Florida Waters.

SEE ALSO POLICY 3.2.1.1.

11.3.1.5 Require that stormwater management planning and the construction of necessary capital improvements coincide with, and provide adequate drainageways and water quality treatment to adequately address, the growth and development of Manatee County.

11.3.1.6 Require that all detention or retention basins shall be designed utilizing side slopes not greater than 4:1 (e.g., 5:1).

11.3.1.7 All projects not within the WO-M or WO-E Overlay Districts shall be designed and constructed to detain, and permit the filtration of, the runoff from the first one (1) inch of rainfall, unless required to detain additional volume pursuant to other policies in this Comprehensive Plan, or pursuant to other local or state regulations.

11.3.1.8 Minimize public and private investment within the twenty-five (25) year floodplain by keeping impervious surface and structures within that floodplain to a minimum (SEE POLICY 11.4.1.4).

11.3.1.9 Require that all fill within the 100-year floodplain shall be compensated by creation of storage of an equal or greater volume, with such compensatory storage also located within the 100-year floodplain. Areas within the 100-year floodplain adjacent to a tidally-influenced water body shall not be subject to this level of service performance standard.

11.3.1.10 All projects shall meet all applicable local, state, and federal stormwater regulations and shall comply with all coastal management plans prepared pursuant to general or special law. The most stringent standard shall apply in the event of a discrepancy between such regulations.

11.3.1.11 Issue development orders that require the issuance of a Certificate of Level of Service Compliance only where compliance with Policies 11.1.3.1., 11.1.3.3, 11.1.3.4., 11.1.3.6, 11.1.3.7, 11.1.3.9, and 11.1.3.10 has been demonstrated in project design.

Implementation Mechanism for 11.3.1.1 through 11.3.1.11:

(a) Review of all proposed development orders which require the issuance of a Certificate of Level of Service Compliance, and review of all proposed capital improvements.

Objective: 11.3.2 MAJOR FACILITIES DESIGN AND MAINTENANCE: Establish criteria with which to identify, construct or reconstruct major drainage facilities which will be maintained by Manatee County according to a regular schedule.

Policies: It shall be the policy of Manatee County to:

11.3.2.1 Modify existing deep, steeply-sided drainage ditches into swale-type drainageways, where adequate right-of-way and maintenance easements can be acquired to accommodate such modifications. Also, where right-of-way acquisition is not unduly expensive, construct all new drainageways using swaled, rather than steep-sided, cross sections.

11.3.2.2 Improve the appearance of major drainage facilities by adequate mowing and landscaping in highly visible locations.

Implementation Mechanism:

(a) Capital and operating expenditures by the Manatee County Public Works Department subject to the availability of funding from an Stormwater Management Fee, or from other sources, to achieve compliance with this policy.

11.3.2.3 Improve wildlife habitat and supplement natural systems by including, where appropriate, and where feasible, the development of artificial wetland systems within the design of public stormwater siltation/detention basins.

Implementation Mechanism:

(a) Manatee County Public Works Department compliance with this policy during project design, where appropriate.

11.3.2.4 Coordinate with the Southwest Florida Water Management District's S.W.I.M. Program to complement regional water quality management programs developed by S.W.I.M., through local stormwater programs. Local needs shall be considered along with regional needs when considering the expenditure of funds on stormwater related improvements.

Objective: 11.3.3 EXISTING DEFICIENCIES: By 1995, acquire the land needed for the major drainage basins identified in Manatee County's Master Stormwater Drainage Plan.

Policies: It shall be the policy of Manatee County to:

11.3.3.1 Conduct advance acquisition of drainage facility sites to avoid escalating land costs and to reduce the need for restudying problem areas due to necessary changes in the location of proposed drainage facilities.

Implementation Mechanism:

(a) Capital expenditures, utilizing revenues from the Stormwater Management Fee or from other sources, to achieve compliance with this objective.

Objective: 11.3.4 STORMWATER DESIGN/REUSE STANDARDS: Detention/retention basins that are safe, aesthetically pleasing, and which facilitate stormwater reuse.

Policies: It shall be the policy of Manatee County to:

11.3.4.1 Require that drainage basins have side slopes of 4:1 or flatter from the top of bank to three feet below the normal water level. Side slopes may be as steep as 2:1

for that area of the drainage basin which will have a normal water level depth greater than six feet.

11.3.4.2 Ensure that new development provides on-site detention and filtration of stormwater runoff to remove oils, floatables, silt, sediment, nutrients, and heavy metals at levels required by applicable federal, state, regional and local regulations. As used in this policy, "new development" shall include additions or alteration of existing development in a manner that increases the impact of stormwater discharge from the site either in terms of volume of water or any pollutant.

11.3.4.3 Prohibit any retention/detention basin from being excavated to a depth which causes the direct exposure of the Floridan aquifer to stormwater retained/detained in any such basin.

Implementation Mechanism:

(a) Review, by Manatee County Public Works Department, of all stormwater plans for compliance with this policy.

11.3.4.4 Generally require the design and use of stormwater retention/detention facilities as sources of water for landscaping irrigation, provided that the use of such facilities for irrigation does not adversely impact normal water levels in a manner which impairs the viability of any biological stormwater treatment systems.

Objective: 11.3.5 FUNDING FOR PUBLIC DRAINAGE FACILITIES: Create an Stormwater Management Fee or other countywide stormwater management funding mechanism, which establishes a monthly charge to all property owners based on the amount of impervious surface, for the purposes of (in part) resolving water quantity and quality problems from stormwater runoff, monitoring stormwater quality, and maintaining public stormwater management systems to ensure the treatment and retention of stormwater consistent with standards contained under Objective 11.3.1.

Policies: It shall be the policy of Manatee County to:

11.3.5.1 Utilize funds from the Stormwater Management Fee, or any other adopted countywide stormwater management funding mechanism, to correct existing deficiencies in major public drainage facilities, as referenced in Objective 11.3.3 and to make improvements to those major drainageways necessary to accommodate additional development in Manatee County.

11.3.5.2 Fund water quality monitoring by use of revenues from the Stornwater Management Fee, or any other adopted stormwater management funding mechanism. Additional water quality monitoring may, however, be required and funded by specific development projects, as deemed appropriate as a condition of development order approval.

11.3.5.3 Allocate funds for public capital improvement drainage projects only in areas that have had a detailed stormwater study prepared, utilizing appropriate revenues to perform and implement such studies. Drainage studies shall define the flooding and/or water quality problems, and shall provide a prioritized list of solutions to the problems, and estimate the cost of the necessary improvements.

Implementation Mechanism:

(a) Implementation of the Stormwater Management Fee and appropriate expenditures of revenues from this fee by the Manatee County Public Works Department to achieve compliance with these policies.

Objective: 11.3.6 PRIVATE DRAINAGE SYSTEMS: Complete funding of the maintenance and operation of private stormwater systems by private sources.

Policies: It shall be the policy of Manatee County to:

11.3.6.1 Require that all private stormwater management systems be maintained, following the construction of any such system, in a manner which ensures the continuing operation of any such private system consistent

with these level of service, and other local, state, and federal standards. Furthermore, consider and implement appropriate action to ensure compliance with this policy, if violated. Such action may include injunctive relief.

Implementation Mechanism:

(a) Listing, and recording by Manatee County Public Works Department, of any owner/operator of any private stormwater management system issued a Certificate of Level of Service Compliance. This would be the party responsible for maintenance of the system.

11.3.6.2 Identify, for each private stormwater management system, a private party that shall be held legally responsible for the continued maintenance and operation of any private stormwater management system. Such party shall have an address of record, and shall represent the interests of all property owners for which the stormwater system has been designed.

Implementation Mechanism:

(a) Recording of one or more private entity meeting this policy requirement, for each stormwater management system, at time of issuance of a Certificate of Level of Service Compliance.

11.3.6.3 Consider the implementation of needed improvements to poorly maintained or poorly functioning private stormwater management systems, where private maintenance required pursuant to Policy 11.3.6.1 is not carried out. Recover the costs to Manatee County of any such improvements through the levy of special assessments on the private party or parties legally responsible for maintenance and operation of the stormwater management system, as described in Policy 11.3.6.2 above.

Implementation Mechanism:

(a) Manatee County Public Works Department notification to parties responsible for stormwater management systems which are poorly maintained or are operating in an unsafe or unsound manner. Also, levy of special assessments to correct system deficiencies not addressed by the private owner/operator within a reasonable timeframe after notification by the County.

GOAL: 11.4 REGULATE LAND USE AND DEVELOPMENT TO PROTECT THE FUNCTIONS OF NATURAL DRAINAGE FEATURES AND SURFICIAL AQUIFER RECHARGE.

Objective: 11.4.1 STORMWATER MANAGEMENT: In urbanizing areas (i.e., where new development is taking place), pursue a nonstructural approach to stormwater management that minimizes the construction of drainage facilities designed to increase conveyance.

Policies: It shall be the policy of Manatee County to:

11.4.1.1 Permit the use of natural water storage areas for retention, infiltration, and evapotranspiration of stormwater, where consistent with other applicable local, state, and federal regulations.

11.4.1.2 Prohibit the alteration of natural watercourses and floodways, unless in the case of a finding of overriding public interest by the Board of County Commissioners.

11.4.1.3 Protect natural drainage features such as streams, lakes, wetlands, and estuaries, and preserve the function of these natural features for conveyance, storage, and treatment of stormwater runoff.

11.4.1.4 Recognize that periodic flooding within the 25-year floodplain is natural and acceptable, and therefore, in order to prevent damage to property and life, prohibit the placement of any habitable structures and other major public and private investment within the 25-year floodplain, for any project that is not a special exeption to

required compliance with this Comprehensive Plan. This policy shall not preclude the development of water-dependent uses, of stormwater management structures, of passive recreational facilities, or non-habitable structures within the 25-year floodplain, where appropriate. Furthermore, application of this policy shall be limited to projects for which mapping of the 25-year floodplain has been accomplished, or where interpolation or use of existing water surface profiles of the watercourse(s) permits the identification of the 25-year flood elevation.

11.4.1.5 Require that all proposed buildings within the 100-year floodplain shall be constructed so that finished floor elevations are above the elevation of the 100-year flood.

Implementation Mechanism:

(a) Review of all proposed development and capital improvements for compliance with these policies.

Objective: 11.4.2 **GROUNDWATER RECHARGE: Development of stormwater retention or detention ponds and wastewater effluent disposal systems that recharge surficial groundwater systems.**

Policies: It shall be the policy of Manatee County to:

11.4.2.1 Design effluent disposal systems to recharge groundwater through the use of storage ponds, by spray irrigation of reclaimed wastewater on urban, agricultural, and recreational areas/sites, and other appropriate recharge methods.

11.4.2.2 By 1991, the County shall develop and implement a program to address groundwater recharge through private and public stormwater management facilities.

Tampa Bay Regional Planning Council Staff

Julia E. Greene, Executive Director
Manny L. Pumariega, Deputy Director
Virginia Allan, Director, Finance
Sheila C. Benz, Director, Planning
Sally D. Gronda, Director, Area Agency on Aging
Margaret E. Gross, Director, Administrative Services
Lorrie A. Paul, Director, Public Information

Administration

Janet Barca
Gloria Milano
Norma Ozias
Peg Pettit
Stephanie Price
Wilfredo Ramos
Priscilla Scott
Lisa Tremayne

Area Agency on Aging

Bill Roberts
Clarence Brauner
Patricia Daly
Charlotte Houck
Helen King
Marilyn Rupp
Sandra Rutledge
Frederick Weigel
Ouida Williams
Eleanor Wolfenden

Agency on Bay Management

Peter Clark
Jerri Bohard

Local Plan and Development Review

Suzanne Cooper
Richard MacAulay
Tim Butts
Doug Currier
Sandra Eberhard
Judy Landon
Shrimatee Ojah Maharaj
Janet Vorhees

Planning and Growth Management Assistance

Linda Klaes
R. Marshall Flynn
Betti Johnson
John Meyer
Ted Miller
H. Gerald Smelt

Regional Information Center/Graphics and Printing

Helen Buckley
Victoria Crouch
Bruce Gaul
Dennis Gourdeau
Karolyn Peckham

Responsible for Report Preparation and Editing

Peter Clark